The Electragist

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Vol. 26, No. 4 — Association of Electragists INTERNATIONAL — FEBRUARY, 1927

KONDU-BOX

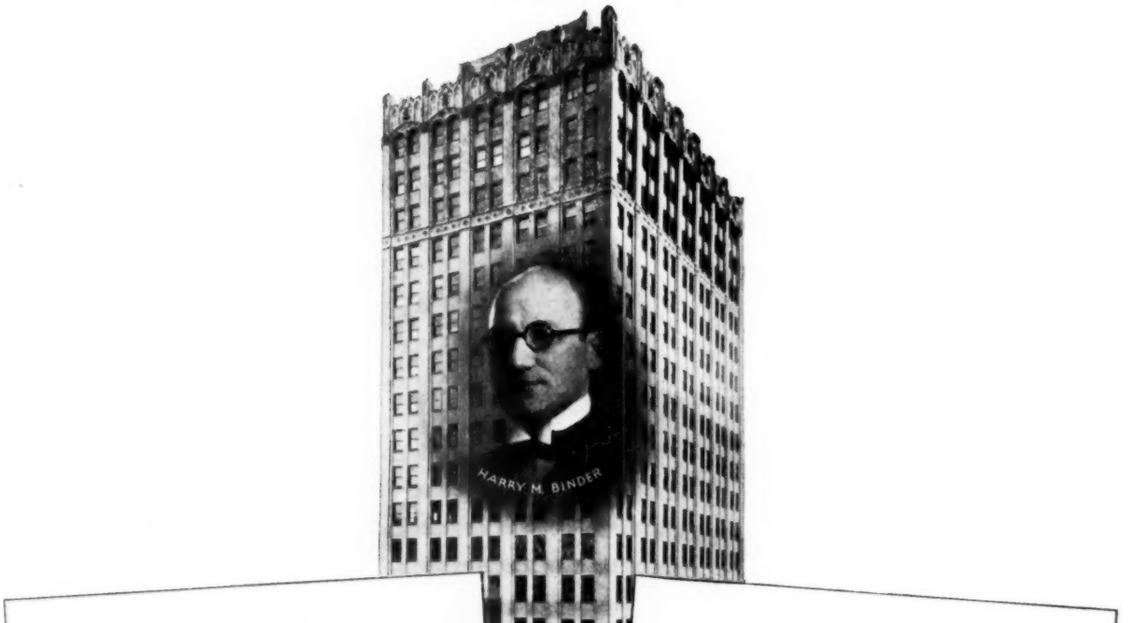
REGISTERED U.S. PATENT OFFICE & CANADA

Threadless Fittings

KONDU-BOX Threadless Fittings—Kondu-Knockout Box Connectors—Kondu Threadless Couplings—Kondu 90° Short Elbows. The greatest boon that's been handed to the contractor in a long, long time. No cutting of threads! No screwing conduit into fittings! And a host of other advantages. Contractors are enthusiastic about this **approved** threadless fitting. Ask your jobber about KONDU-BOX. Write us for catalog and sample.

ERIE MALLEABLE IRON CO.
KONDU DIVISION, ERIE, PA.

HUBBELL
Screwless Plate
Bakelite



WILLIAM SPENCER CROSBY
ARCHITECT-ENGINEER
CHICAGO ILLINOIS

December 23, 1926.

Harvey Hubbell Co.,
218 N. Washington St.,
Chicago, Ill.

Dear Sirs:

We are entirely satisfied in our choice of your bakelite screwless switch plates for use in the Medical Arts Building, Omaha, Nebraska. As you know, we put the plates to rather severe tests before we adopted them and since their installation they have proven to be first class equipment in every way

Very truly yours,

Wm. S. Crosb.,
Jos. G. MacArthur,
Associated Architects.

HARRY M. BINDER
ELECTRICAL CONTRACTOR AND ENGINEER
OMAHA, NEBRASKA

November 23, 1926.

Harvey Hubbell, Inc.,
218 N. Washington St.,
Chicago, Ill.

Gentlemen: Attention: Mr. L.G.Mockenhaupt

Assuming that you have had many complimentary remarks concerning your achievement in perfecting the screwless switch plate I wish to supplement them by advising that the results obtained from the use of these screwless switch plates in the new Medical Arts Building at Omaha, Nebraska have been most satisfactory.

The dignity they express together with the simplicity of installation should be an inspiration to the electrical industry.

Yours very truly,

Electrical Work Designed by
Mr. Philip Kent, Electrical Engineer

HARVEY HUBBELL, INC. **BRIDGEPORT, CONN.**
New York **Chicago**

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The Electragist

(The National Electrical Contractor and The Electrical Contractor-Dealer)

Official Journal of the
Association of Electragists—International

Vol. 26 FEBRUARY, 1927 No. 4

The Job Layout Gets Business for These Contractors

A Plain Unvarnished Account of How Two California Contractors Are Distancing Competition by Submitting Layouts with Their Bids

By C. J. GEISBUSH,
Executive Secretary, California Electragists, Southern Division

IN THE estimating courses which are being given by the Southern Division of the California Electragists we have been emphasizing the value of making job layouts as described in Part I of the Manual of Estimating. This short paragraph explains how a layout should be made, describes the use of the various colored pencils and mentions the desirability of an office record of the job to be estimated. In two sentences the reader is advised to use tracing paper when laying out a job and to keep the copy made for his records.

Importance of Layout

We have accepted this suggestion for use in the course and use a sheet of tracing paper for laying out the job given in the first lesson, together with the large inked drawing we use for purposes of explanation. In all the lessons given in the various districts we stress the importance of a careful layout and the maintenance of these records in the contractor's office. This part of the lesson has not always scored a hit. In fact, the suggestion brought out considerable criticism because it appeared that such a method would require quite a bit of work on the part of the contractor.

However, at least two contractors thought well of the suggestion and have adopted it, with very gratifying results. P. R. Machtolf of Glendale immediately purchased a complete set of drawing instruments, together with a drawing board and a large supply of high grade tracing paper and used this equipment in laying out all jobs, however small. Though he had no previous experience at draughting, it was not long before he became quite expert and one would have had to look closely before it could be seen that the layout was not done by a trained engineer.

Here are some of the results gained by using the system: A large hospital job came up in Glendale some months back. Many contractors were asked to figure on incomplete plans and specifications. Mr. Machtolf carefully laid out the job, using the best of engineering practice and applying the local and state code for hospital work. He bid on the job and was between a thousand and two thousand dollars high. A doctor, acting as chairman of the board of directors, informed Machtolf that he had been eliminated from the contest.

But about two weeks after he was informed that he had lost the job the same doctor who had previously carried bad news dropped into his store to purchase a radio battery and opened up the discussion of the hospital, expressing a desire to have Machtolf do the job, but "unfortunately you were too high." Machtolf took him back to the little drafting room, unrolled the set of prints and started on an explanation of why "his price was too high."

The doctor was immediately interested because he saw portrayed there in different colored inks the various systems used in a hospital. He expressed a desire to have the architect see Mr. Machtolf's layout. An appointment was made. When the architect looked over the layout he expressed amazement and inquired, "Since when have electrical contractors gone to such detail?"

He Got the Job

"Since the Electragists have had an organization on the coast," the contractor replied. "This is the same system used all over the United States by reputable electrical contractors."

After a very careful discussion of the job and a few changes required by the architect Machtolf got the job.

And the sequel is that Machtolf regularly does the electrical engineering and layout work for the architect on a fee basis if the job is not in his district and he does not care to bid on it.

A second incident took place in the

same contractor's store, but this time on a large apartment house. It was necessary to make an electrical layout for a large apartment house to be built in the city of Los Angeles. The Red Seal Plan had just been announced by the California Electrical Bureau. Machtolf made the layout according to Red Seal, explained the value to the owner and the job was sent out for bids, using this layout. As the electrical work on this job would run between thirty and forty thousand dollars and Machtolf was not in that class, operating a much smaller business, he withdrew from the competition.

Mr. Machtolf, however, was paid for his services as engineer and retained in the capacity of supervisor and inspector as the personal representative of the owner.

Residence Layouts

Again, a builder of fine residences brought his electrical problems to Machtolf, explaining that he wanted the best. Machtolf, in a very careful layout, estimated the jobs, using the Electragist units, and was awarded the contracts for all the six houses to be built. The builder admitted awarding the contract on the strength of the excellent layout, and expressed himself as believing that "any contractor who took such pains in making an electrical layout for a comparatively small job must certainly know his business."

Another contractor, Frank McGinley, operates a small business in an industrial district. He has great difficulty in keeping his industrial customers because of the tendency on the part of many of the purchasing agents to purchase material direct and install their own electrical work. Therefore, he is constantly called upon to prove the economy of his services.

One of his methods is the layout system which he uses in estimating any new work. We have discussed estimating and industrial problems from time to time and during one of these discussions a suggestion was made that if this method is good for estimating new work, why wouldn't it pay to make a very careful survey of all industrials in the district, work up an electrical layout for each and submit it to the owner with a suggestion that it would be of considerable value when any changes or extensions were to be made, the thought being that such an attempt to render a service would attract attention to the McGinley company and make it easier to obtain industrial business.

Two days were spent in making the first electrical layout of a job already installed, which happened to be a rag washing works. The owner was mildly interested, and we were more or less cussed out by the help for getting in their way, but we completed the layout, prepared a very beautiful letter and just before sending it received the sad news that the rag works had gone into the hands of a receiver.

Not dismayed by the failure of this first attempt, the same idea was tried on one of the large canneries. A survey of the plant required considerable time for the observer and much more for the man making the layout. The actual observation of the work was done by anybody who had an opportunity to spend a few hours in the cannery and the layout, using the information provided by the observers, was made by a young high school boy specializing in mechanical drawing. After several weeks of effort the plans were completed and it was the intention of McGinley to present them to the president of the cannery during the following week. On Saturday night the cannery burned down!

On the following Sunday I visited McGinley with the intention of attempting to justify the theory which we had originally held and, incidentally, condole with him. While at his place a telephone call came from the engineer of the Coast Fishing Company to come down immediately, that the insurance adjustor wanted to see him.

When we got to the plant we were introduced to the insurance adjustor who immediately started a rapid fire of questions on the electrical installation of the plant: "Where would this pipe run? How many wires were in it? What size was this motor? Was it protected by a compensator?" etc.

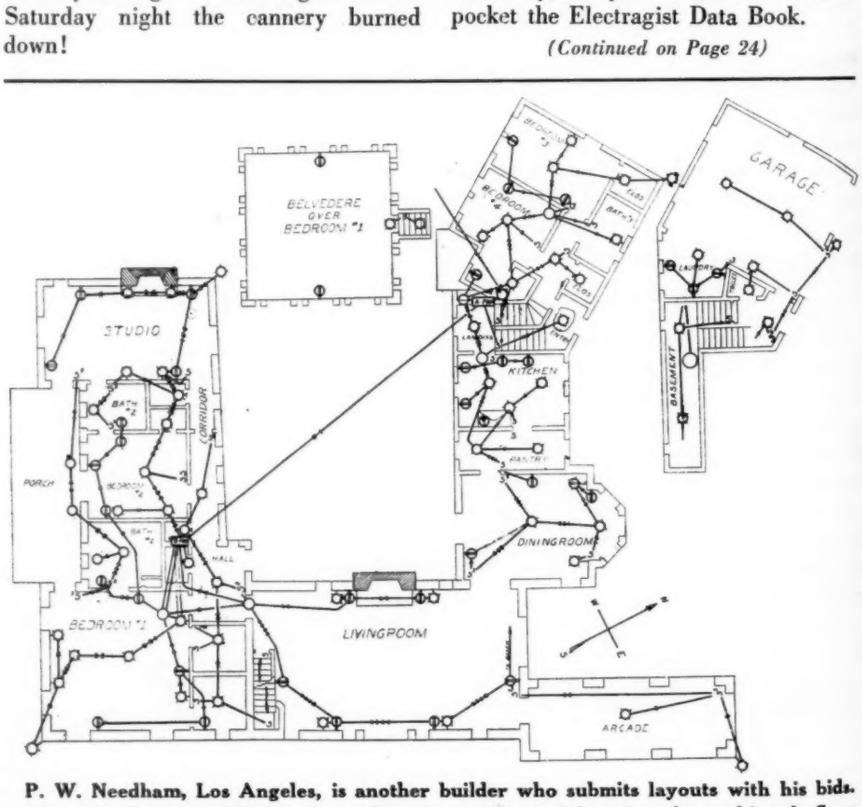
Mr. McGinley stopped long enough to inform him that he would give him the complete information if he would only wait a few moments. The adjustor was surprised, but agreed to wait.

McGinley went back to his shop and returned with the layouts.

"Just the thing I need," said the insurance adjustor. "Now the only thing that's lacking is some idea as to how much labor would be necessary for the re-installation of this job, together with material prices."

"We also have some of that," replied McGinley, and jerked from his left rear pocket the Electragist Data Book.

(Continued on Page 24)



P. W. Needham, Los Angeles, is another builder who submits layouts with his bids. Above is the type of layout he makes of a residence job, using the architect's floor plan as a basis

Analysis of Proposed N. E. Code Changes

Greater Uniformity Is Evident Aim of Changes Which Are to be Considered at February Meeting of Electrical Committee

THE reports of the article committees with the proposed changes in the National Electrical Code which will be acted upon by the Electrical Committee at its annual meeting this month show exceptional effort towards uniformity. Wherever the work of committees overlapped the article changes have been so worded as to convey the same meaning everywhere.

Most of the proposed changes which the Electrical Committee will vote on are taken up in clarification—clarification of wording and meaning, bringing one article in line with the others.

If these changes are acted upon favorably the 1927 Code will contain many "where" clauses, as the places where certain kinds of construction will be permitted are closely defined.

A much more general recognition is given to the use of conduits in places where conductors might be damaged.

Branch circuit conductor and fuse sizes for motor wiring are shown for the first time.

Grounding rules show the greatest changes. Rules for equipment grounds are suggested for inclusion in the Code at some near future date.

It is not possible at this time to give more than the briefest kind of analysis of the proposals as follows:

ARTICLE 1. Definitions. New definitions for clarity and completeness on Accessible, Approved, Circuit Breakers, Conductor, Controller, Extra Hazardous Location, Hazardous Location, Motion Picture Studio, Panelboard, Portable Appliances, Service, Special Permission and Theatre.

ARTICLE 2. General. One or two editorial changes for clarity.

ARTICLE 3. Outside Supply Lines—Editorial.

ARTICLE 4. Services. Only one set of overhead services permitted for the same system. Conduit on outside of buildings to be weatherproof and painted. Service wires not to be subject to mechanical injury within 8 ft. of ground. Bond wire of No. 8 or large required where flexible conduit interrupts a rigid conduit run. Numerous other changes for clarification or to line up with other articles.

ARTICLE 5. Wiring Methods. New section 500 giving recognized types. Knob and tube rules clarified. Old 5-in. spacing rule reduced to 4 in. Flexible conduit not permitted for outside services. Clarification of rules governing number of wires in a conduit. Definition of where wooden and other raceways may be used. No. 12 wire may be used in metal raceways. For final extensions metal raceways may be concealed under the plaster. New section 511 on electrical systems, their definitions and "where" and "how" they may be used. No. 612 changed to No. 512. New section 513 on bare conductors. Section on "Bare Grounded Wire System" is presented with suggestion it be referred back again for another year's work and study.

ARTICLE 6. Conductors. Large number of editorial changes. Definition of fixture wires. Suggestion for renumbering of sections.

ARTICLE 7. Outlet Boxes and Cabinets. Article entirely rearranged. The use of outlet plates and cable boxes prohibited by requirement that outlet boxes for concealed work must have a depth of at least 1½ in. It is insisted that fittings shall close box openings tightly. Bonding of boxes and cabinets to conduits, armored cable and metal raceways required.

ARTICLE 8. Automatic Protection of Circuits. Inclusion of thermal cutouts and calling all devices under this head A. O. P. D. (Automatic Overload Protective Devices). Defines each. Defines different kinds of branch circuits. Tables of wire and fuse sizes for motor wiring.

ARTICLE 9. Grounding. More careful definition of requirements. Stiffening in rules. Recommendations for portable equipment grounds.

ARTICLE 10. Rotating Machinery—Editorial.

ARTICLE 11. Transformers Under 600 Volts. Grounding rules for bell transformer primaries.

ARTICLE 12. Switches—Editorial

ARTICLE 14. Fixtures—Editorial.

ARTICLE 15. Lamps—Editorial.

ARTICLE 16. Electrically Heated Appliances. All flatirons must be equipped with stand and where for other than residence use must also have signaling device to show whether current is on or off.

ARTICLE 30. Cranes and Hoists. Recommendations for grounding.

ARTICLE 32. Extra Hazardous Location—Editorial.

ARTICLE 33. Garages—Editorial.

ARTICLE 34. Motion Picture Studios—Editorial.

ARTICLE 35. Motion Picture Projection—Editorial.

ARTICLE 36. Organs. Editorial.

ARTICLE 37. Radio Equipment—a stiffening up in requirement.

ARTICLE 38. Signs and Outline Wiring—Largely changed in wording to confine weatherproofing to outdoor equipment.

Pamphlet Containing 1926 Code Amendments

A pamphlet containing the amendments to the 1925 edition of the National Electrical Code, adopted at the 1926 meeting of the N. F. P. A., is now in course of publication and will shortly be available for distribution.

Intangible Benefits of a Trade Association*

The Primary Object of a Contractor-Dealer Association Is to Give the Localized Mind a National Thinking and Expression

By JOSEPH A. FOWLER,
President, Association of Electragists, International

TWENTY-SIX years ago when the electrical contractors organized nationally, men formed associations for direct tangible benefits to themselves. They had little thought for what their association could do for the common good. Then trade associations were militant protectionists.

Today we live in a different business atmosphere. It is not that we have any less personal ambitions, it is not that the individual is any less selfish. Our individual thinking is pretty much the same—it is our group thinking that is different.

We have learned—perhaps with the help of the Sherman Act—that unselfish group thinking is the only kind that can survive. Any trade association, be it national or local, that hasn't learned that lesson—that still believes its sole purpose is to satisfy the selfish ends of its membership with regard for no one else—that refuses to lend its hand for the common cause of the industry—such an association is headed for destruction.

Conflicting Aims

We have seen frequent examples of organizations set up to do some very selfish bit of work for members—they are never successful because it is impossible to obtain such desires without treading on the toes of some other interest—and naturally no one in his senses is going to permit another to walk on him—even worms squirm.

In our branch of the industry we have more units than all of the rest of the electrical industry put together. There are probably between thirty and forty thousand electrical contractors in this country. With few exceptions these men operate solely within their own localities.

Here then we have from thirty to forty thousand individual localized viewpoints. Our job is to give that localized mind a national thinking, not by making the individual think nationally, but by so guiding his thinking and his efforts that he will be in line with national thought and practice.

Tangible Accomplishments

Some of the accomplishments of this nationalization of thought are tangible, while others are intangible. In the tangible classification would come standard methods on ways of doing things, standardized cost finding, standard methods of bidding or of specifications, standards of materials and products.

In reality the primary benefits of organization work are intangible and yet these intangible benefits are inevitably and eventually translated into material results. The force employed to bring about such an objective is broadly defined as education.

Major Responsibility

Our Association conceives as its major responsibility the conduct of an industry school for the training not only of our own members, but of all those engaged in our branch of the business. We are confronted with a problem which in magnitude overshadows any other undertaking in the industry.

We frankly admit that our branch of the industry presents a problem too complex for us to solve unaided. We know that campaigns such as Red Seal and others, which mean so much to the industry, are being handicapped because our group is not ready to take advantage of them. We know that many leagues are not functioning satisfactorily because of the antagonism which exists between central stations and contractor-dealers. We know that the mortality of the contractor-dealer is high, with its attendant financial loss to the industry, because having been a wireman yesterday with no conception of business methods he has had hardly anybody to tell him what it's all about.

We appreciate that tendencies toward selfish and unwise legislation seem rampant and that contractor-dealers are to a considerable extent responsible.

Local Outlook

We know that individually and in local groups the contractor-dealer, unlike every other class, is a creature of his own environment—that he is provincial in his outlook—with limited national vision. We concede that to some extent the picture I have sketched is a reflection of many of our own members.

Without reasonably adequate guidance and leadership for these thirty to forty thousand individual units, the entire campaign for standardization and forward movement is seriously jeopardized. If every member of an army went his own sweet way that army would be a menace to itself and everyone else. It is only when all units are acting in unison that an army accomplishes anything.

The local man has little opportunity for a national perspective except he is shown the way. Without this perspective he has no sense of industry responsibility and naturally there follows conflict of interest and waste motion.

The individual by virtue of his scheme of living sees first the local as-

* Presented at the mid-winter meeting of the Supply Division of the newly organized National Electrical Manufacturers' Association, New York, January 19, 1927.

pect. When thinking of legislation he thinks only of getting something to correct certain evils with which he has had to contend. He has no conception of the effect of the proposed remedies on anyone but himself—all his business training has been for self-preservation and naturally he considers nothing else. Quite naturally his proposed remedies are frequently unsound and distinctly out of line with existing national standards. Awaken in him a national consciousness and we will have fewer local conflicts with national viewpoints.

The great intangible value of trade associations is education. Teach the thousands to become articulate as a group—to become respectful of standards because they recognize and appreciate their value—to respect the laws or Codes of the industry because they represent best practice—to understand their responsibility as individuals to their group and to the industry—to appreciate that the fruits of large success come not from individual efforts, but from unity of purpose.

You gentlemen know how difficult it is to accomplish those aims with a small group of educated men like yourselves.

You can imagine then with what timidity we have approached our problem. There isn't a selfish plan in our entire program. We have dedicated ourselves to the education and elevation of our group that it may stand for the highest principles of public service, best installation practice and maximum development of the electrical industry.

We are conscious of our own limitations, but we are tremendously in earnest about meeting our responsibilities and we need and welcome the help of those who believe in the sincerity of our purpose.

"The Same Old Story"

The Electrical Contractors' Association of New York, Number 1, at Their Annual Beefsteak Dinner, Dramatize the Sorrows of the Electrical Contracting Business

Scene—Office of Gyp & Co., General Contractors.

Time—Twenty years ago, the Present, and probably Always.

Properties by—Whoever will give credit or take an assignment.

Electrical Work—"Donated" by suckers in the business.

Temporary Lights—Included with no extra charge.

Cast of Characters—Any one or all of us.

General Contractor—Well, how's the office building job? Did you place all your sub-contractors?

Partner—Yes, all but the electrical.

G. C.—Did you save any money on them?

P.—No, not a dime. The plumber told me if I didn't give him the job within three days they'd all raise their prices. Steamfitters told me the same thing, so we had to hand over these subcontracts at the same price as we figured them; the same with the other trades on the job.

G. C.—Well, where are we going to get any profit on this job; we put our bid in at cost. It doesn't look very rosy, does it?

P.—Thank God, the electrical contractors are still in the business. Fifteen of them figured with me on the job and four of them have been in to see me and told me to write my own ticket, or they would take the job as low as any figure I could get for the job.

G. C.—Well, what are you going to do about it?

P.—I have invited the four of them in here this morning and we will see just how low they will go.

G. C.—What price did we use for the electric work on this job?

P.—Eighty-five thousand dollars.

G. C.—How close do you think we ought to buy it?

P.—Oh! about $50,000.

G. C.—Well, that looks better. We certainly will shake them down.

Telephone rings: Message from the outside office that four electrical contractors have arrived and want to see the Boss.

G. C.—Now, watch me handle this crowd. I'm going to pull something new.

P.—Don't pull anything new, because the only thing new in giving an electrical contractor a job that I know would be to give him his own price, or a profit on the job. Don't do that or we are lost.

G. C.—Well, have it as you like, only I'll pull something real rough. Now watch me. Show them in!

(Enter the four Electrical Contractors)

G. C.—How do you do, boys! *(Shakes hands with them all.)* You know my partner, Mr. Brown, Mr. White, Mr. Speed, Mr. Quick. Now you know boys!—have a cigar—*(Pulls out a box of cigars)* you know boys, I was just saying to my partner before you came in that if there is one trade we like on the job it is the electrical contractor. I was saying you fellows are the cleverest, smartest, brightest, nicest lot of people to do business with, and if it wasn't for the electrical contractor I don't know what the general contractor would do. *(Turns and winks at his partner.)* Of course, you know boys, we've only got one job to give out and the sad thing is that we cannot give it to you all. As I was saying to my partner, I think we ought to give you all a chance to get the job, because we want to deal perfectly fair in this matter *(Winks again)* and to show you our unfailing appreciation of the fine way you boys behave. Now you know, boys, we did not use any of your figures on this job. We just made up our own electrical figure, because competition is pretty close and we have to shop around to get a job these days. Don't forget this job is going fast and the money will be waiting for you—maybe—and the job is in a nice sunny location, commands a lovely view of the Drive and the river and it will be a very pleasant place for your men to work. I'm sure that this is going to help you very much in getting the job done. And you can put a big sign on the building about your unusual service and the advertising value of doing this job and being associated with us is worth a thousand dollars to you gentlemen. *(Smiles behind his hand.)* Now to get down to business; I am going to give you all a chance to take this job and so I will ask you, Mr. Brown, what your estimate on this job is.

Brown—Eighty thousand dollars.

G. C.—How come?

Brown—Well, there's $40,000 worth of material and $30,000 worth of labor and $10,000 for overhead and profit.

G. C.—Why, a smart fellow like you don't need any overhead; and as for profit, look at the advertising feature you will get on this job. I understand —I don't want to divulge any confidential information—that there is going to be a barrel of extras on this job and you can get your own price for the extras. As far as cutting the material on the job, go the limit. The job is a concealed job and will never show. All we ask you to do is to make the lights light and get a certificate. And being smart and businesslike and getting along without overhead, why, you could cut your labor down, because your men are fond of you and they will do a lot of work for you. They told me so. And if they don't, all you have to do is call on the Union and they'll make them do it for you. And when it comes to $40,000 worth of material, why a clever man like you could discount that by at least $10,000; so, getting down to business, you could figure your material at $30,000, your labor at $20,000 and I think we'll all agree that a high price for the job would be $50,000.

Speed—Sure, he's right. We're all smart fellows; we don't need any overhead and I'll make my bid $60,000.

Brown—Well, if you can do it for $60,000, I will do it for $59,000.

Quick—I will do it for $55,000; I am faster than you guys.

White—Well, coming to think the thing over, I will take it for $51,000 flat. My estimator gave me a cost of $80,000 but after listening to the general contractor, who is always right, I know the job could be done for $50,000 and so I will make my bid $51,000.

Speed—Well, if you fellows think I am going to sit here and lose this job, you are mistaken. I want this job and need it badly; I need it to keep my organization together, and so I will take it for $49,000.

Brown—Where do you get off; you haven't any prior right to take this job. I live near this job and can see it from my apartment window and for that reason I am going to take this job at $47,000. I am going to buy a spy glass and let my wife watch the job when I am away from home.

G. C.—That's the right spirit; now you fellows are getting down to brass tacks. In my first statement I said $50,000 was a high price for the job: you have borne me out and confirmed my superior judgment, for which I thank you. I will close the job now for $45,000 and I said I'd give you all a chance; and so we will solve this little problem by letting you four gentlemen stand up against the wall, with your faces toward the wall. Now I have this blank contract here on my desk and when I count "three" you are to make a dash for the contract and the first man to get his name on the blank contract, gets the job. This is a very liberal form of contract; one which we use with much success in this office. It provides for all temporary light, temporary power and necessary overtime work and has general and very liberal clauses, such as "Penalties," "Waiting if necessary for your money" (we will give you notes). Would any of you gentlemen care to glance at this contract?

Chorus by the four—No! As long as it's a contract we'll sign it; the details we can read later.

General contractor places blank contract on his desk, marking an X where to sign. Places a fountain pen, which will write, next to the contract and the four contractors take their places against the wall.

G. C.—(Counts: One, two, three)—A mad dash for the table in which Brown trips Quick and Quick grabs Brown and Speed reaches the contract first and signs it. All contractors, including the general contractor and his partner, crowd around Speed to shake his hand and congratulate him.

Brown—Of course, the job is pretty close.

Speed—How can you tell it's close until you do it?

Exit the four contractors

G. C. and his partner shake hands, congratulate one another and do the Merry Widow waltz.

Curtain.

The Job Layout Gets Business for These Contractors

(Continued from Page 20)

"This book contains complete information, scientifically worked out, on all labor operations for the installation of an electrical job," he explained. "You will note on this page we have complete information on the man hour cost for installing conduit. Also outlet boxes and, over here, time studies for pipe entering boxes. You will also note that our technical director has taken into consideration the possible increase or decrease of these figures by certain conditions affecting the job. This is treated under Job Factor ————," and so on until the insurance adjustor threw up his hands and expressed himself as being willing to accept the book as it stood.

To give the essence of the story Mr. McGinley estimated the job, using the layout suggested on page 1, the figures suggested on page 16, etc., and priced the whole thing out of the Pacific Coast Data and Sales Book, submitted the whole business to the adjustor and the owner of the cannery received payment in full without any questions.

Sam Hornstein, the owner, a very generous individual, immediately commanded the presence of McGinley and complimented this "wide-awake" electrical contractor. Before he left the room he had a contract in his pocket, signed by Hornstein, to do all the electrical work in the new plant on a time material basis (the job amounted to over $8,000), the contract including the selling of the motors.

It happens that the cannery owner is the chairman of a large cannery organization in our section of the country and he was so pleased with the results obtained from the layout of his electrical work and, incidentally, with the new installation which has just been completed, that he advertised it rather widely at one of the meetings of the association with the result that McGinley has orders from several of the other canneries for a complete electrical survey and layout of their work.

Contractors have always complained that it is hard to sell good wiring because it is an invisible commodity. The job layout system transforms it into something tangible and out here we are convinced that any contractor who uses the system can cash in on it, just as the two above-mentioned contractors have.

How Burch Puts the Human Touch in Direct-Mail Solicitation

Some of the Methods Used by This Wisconsin Electragist to Get Away From the Stereotyped Forms of Direct-Mail Advertising

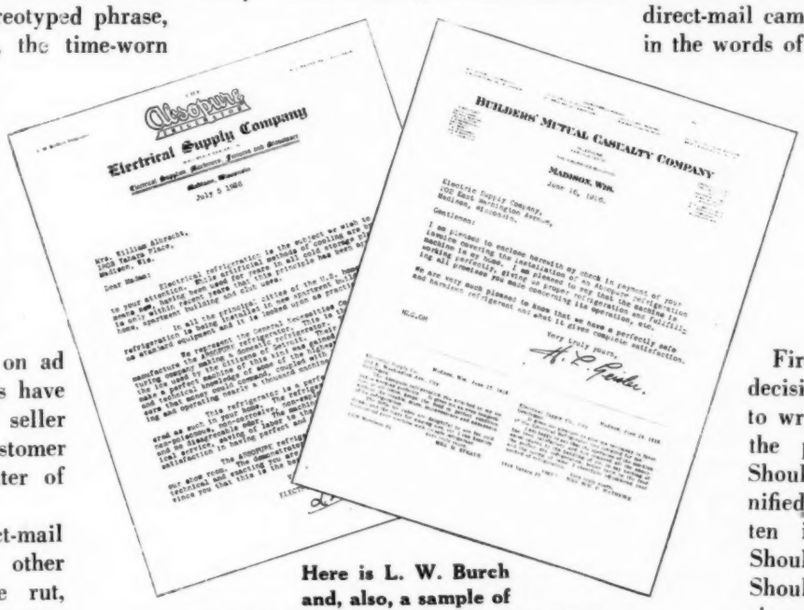
By R. NEVIN

ALMOST any kind of advertising, it might seem, should be better than none at all. However, there is plenty of room to question the truth of that. What about the use in direct-mail campaigns of the stereotyped phrase, the rubber-stamp idea, the time-worn boast of superlative excellence, the impersonal invitation to buy? The public has received so many letters containing such declarations as "Quality first," "Come in and try us," "best," "finest," "We are here to serve you," and so on ad nauseam that the words have become empty. Any seller will promise his customer those things as a matter of course.

It is only when direct-mail advertising—or any other sort—gets out of the rut, uses fresh and engaging phrases, recasts old ideas until they read like new and, in so many words, creates human-interest copy, that this advertising begins to get results.

A good example of how to make broadcasted sales letters readable and interesting is furnished by L. W. Burch, president of the Electrical Supply Company, Madison, Wis., and incidentally, secretary of the Wisconsin State Association of Electrical Contractors and Dealers.

The firm does both contracting and merchandising and its history goes back more than 25 years. During that period the electrical field has gone through many transformations, not the least of which is the changed attitude toward the public. At one time the industry—and this includes every part of it in direct contact with the public, central station, dealer and contractor—thought that because electrical men knew how good electrical service was the public ought to know the same fact instinctively. Then came the realization that the man on the street didn't know such facts instinctively, that he had to be educated.



Here is L. W. Burch and, also, a sample of how he uses the back of his direct-mail letterheads for another and the best form of advertising, reprinted letters from satisfied customers

In line with this trend, Mr. Burch concentrated on the preparation of a direct-mail campaign which would last, in the words of the popular song, "Not for just a day, not for just a year," but for as long as he remained in business or, at the shortest, until such a time as some better method could be devised. So far he has been able to find no better method.

First of course came the decision on the sort of letters to write, the style to use and the proper tone to adopt. Should the letters be very dignified? Should they be written in a humorous vein? Should they be serious? Should they go into the various selling points of whatever device was being offered in the letter? Or should they concentrate on the comfort, convenience and service that could be obtained from that device?

In the end it was decided that the criterion of a letter should be its naturalness. If it was something which would sound forced if coming from the lips of a salesman in the store, then it would sound forced on a typewritten page and it was not good enough for the purpose. Courtesy, ease and a familiarity that does not err either on the side of servility or offensiveness characterizes all the letters that go out from the store.

For instance, Burch has evolved a letter which is sent to each new resident who moves into Madison. This is it:

"A former great statesman of ours, James G. Blaine, once said, 'I do not like to see a man hang around for an office all the time—it looks bad—but it would be just as well for a man to be nearby, providing the office was looking for him.'

"Now we do not wish to appear as though we were jumping onto you as you come into town to get you to buy something from us. However, we do want you to know that we are in business here in Madison at 202 East Washington Avenue (one block from the square) and have been for over twenty-five years.

"Also we want you to know that we do electrical wiring, repairing, install fixtures, sell irons, washing machines, lamps, etc., and have a regular contractor and dealer's store, and that we are at your service.

"We trust you will like Madison to live in as well as we do."

This letter is typical of all those that Burch sends out. In the first two paragraphs he conveys a lot of ideas without actually putting them into words. He says in effect that he knows the newcomer is very busy getting settled and that he isn't going to bother him for business but, if he does need anything electrical, the Electrical Supply Company is handy, that it wants business, but wants it only in a neighborly way. The third paragraph lists, without any fuss or circus ballyhoo, the sort of service the store is ready to give. And the last sentence subtly conveys a boost for the town and a spirit of welcome.

Another series of letters has been developed to push sales of large appliances, particularly those of refrigerators, and in this series Burch has made use of a psychological fact everyone talks about and few people take advantage of. This bit of sales psychology is that there is no better advertisement than a satisfied customer.

Burch has sold electrical refrigerators to many prominent families in Madison and whenever a customer is genuinely satisfied with his machine Burch has induced him to write a letter of commendation to the company.

Permission to use these letters for advertising purposes is requested and as a rule this is not hard to obtain. Receiving it, he has cuts made of the commendatory letters and then prints them on the back of the form letters he sends to his list of prospects. A sample of how this is done is shown on the preceding page. The reader, perceiving the tribute of a noted local man, cannot help being impressed by it. Here is a sample of one of these reprinted letters, which comes from Judge E. Ray Stevens, justice of the Wisconsin Supreme Court:

THE STATE OF WISCONSIN
Supreme Court Chambers
Madison
July 12, 1926.

L. W. Burch,
202 E. Washington Ave.
City.

Dear Mr. Burch:

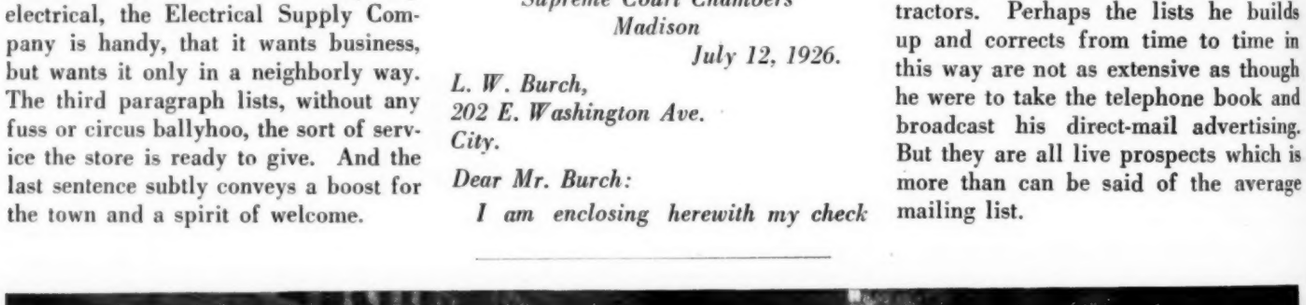
I am enclosing herewith my check for the refrigerator unit installed in my house. It now is in splendid order.

I want to take this occasion to express my appreciation of the way in which you have lived up to your guarantee to put the plant in perfect operating shape and keep it up so far for the first year of its existence. As you know, I placed the order with you because I knew that your word in the matter would be absolutely as good as your bond.

Sincerely yours,
E. Ray Stevens.

Still other series of letters, embodying the same pleasant, unassuming but resultful style, are continually going out on such topics as wiring installations in new homes, re-wiring in old homes, re-fixturing and merchandising.

But the best of form letters isn't worth anything without a good list to which it can be sent. Where does Burch get his lists? The answer is found in his knowledge of the real estate market of his city. The building permit columns and the real estate pages of the local papers furnish him with many good leads. Besides that he is always in close touch with local architects, real estate agents, the municipal building commissioner and general contractors. Perhaps the lists he builds up and corrects from time to time in this way are not as extensive as though he were to take the telephone book and broadcast his direct-mail advertising. But they are all live prospects which is more than can be said of the average mailing list.



Omaha Lights Its Streets With Christmas Trees

OMAHA'S 1926 Christmas was more than ever an electrical one. The above photograph shows a section of the downtown shopping streets illuminated by Christmas trees, bespangled with electric lights, and this form of decoration was used on all the downtown streets. The plan was sponsored by the Association Retailers of Omaha and sold by it to the members so that all the electrical industry had to do was set the trees up and supply the current.

More than two hundred ten-foot trees were lighted by 18 ten-watt lamps each and these were kept burning from 5 until 12 p. m. every evening from December 4 to December 29 with results far beyond expectation.

Organizing the Finances of a New Company

Legal Form of Company
Capital Necessary
Banking Connections
Proper Credit Policy
Types of Insurance

By M. S. MacNAUGHT,
Vice President, Barnes-Pope Company, Boston

No matter what volume a contractor may do, he cannot make a satisfactory profit unless his business is on a sound financial basis. A good time to put it on a solid foundation in this regard is when the structure is first built; but other good opportunities are offered when there is a reorganization, an expansion, a change in ownership, etc. Mr. MacNaught in this article, the first of several on the subject of financial organization, points out some things to do and a few not to do when arranging the money end of the business.—THE EDITOR.

A STUDY of the financial administration of a contracting business divides itself into distinct parts, the first dealing particularly with initial organization policies, the second with problems affecting the success of the venture after it has received its start.

The fundamental principles concerning the initial organization apply alike to entirely new concerns, and to old companies whose original financial structures have been poorly conceived and require thorough and intelligent renovation. An established firm planning a fresh start, and a brand new outfit are on precisely the same footing from a financial organization point of view.

The electragist who is willing to spend time studying his money problems until he thoroughly understands their bearing upon his future, and who carries on his operations from the very first day with due regard to established financial rules has made his most important bid for success. Regardless of volume, the concern which is properly proportioned and soundly handled cannot fail to make money, be it ever so little.

To the man just starting, to the small contractor who has ideas for future growth, or to the established electragist who feels the need for a reorganization, just this can be said: lay deep foundations, and build upon them a financial structure whose every member is planned in accordance with accepted methods. Make the organization simple, but absolutely sound.

Of great fundamental importance is the legal form of the company; that is, shall it be corporation, partnership, or shall it be controlled by the lone hand of a sole proprietor? The answer is best found by examining the vices and virtues of the three classes.

Sole Proprietorship

The sole proprietorship, as its name indicates, is founded upon one individual, in whose name credit is secured, business solicited, and who accepts complete legal and financial responsibility for his own acts and those of his subordinates deputized as his agents. To the everlasting credit of this form it must be admitted that it is simple to start, requires no charter or other formal permit to exist, is not obliged to maintain complex accounting systems, and is favored by national and state tax laws. Any man who can raise the requisite credit and business volume may become a sole proprietor without further ceremony.

Offsetting the advantages, a sole proprietor is responsible without limit for the liabilities he incurs. Also, by its very nature, this form of business unit must be financed by one man, hence its capital is limited to the resources of one person. Thirdly, since the owner is entitled to all of the profits, there is every probability that many excellent men would refuse to work for such a concern. To the really capable man, the prospect of partnership or ownership of corporate stock is desirable in order that he may share in profits made by his skill.

Turning now to the partnership, we find that this form embraces two or more individuals who combine for commercial purposes and who have a definite understanding as to contributions to the partnership capital account, responsibilities, and division of profits or losses. The partnership, like the sole proprietorship, is easily established, and may be launched with a minimum of expense or difficulty. To legally form a partnership there must usually be: (1) a contract between competent parties; (2) a lawful business; (3) partnership capital; and (4) agreement as to control.

The Partnership

While there are several rather distinctive features of the partnership which tend to limit its desirability so far as the electragist is concerned, its outstanding disadvantages may be summarized as follows: each partner is personally liable without limit for all existing obligations in case of insolvency of the firm; the act of one partner is binding upon all; and finally, upon the death of a partner, or dissolution of the firm for any other reason, an accounting may be demanded, and the withdrawing partner, his attorney, or his estate may act to remove his capital and his share in profits or surplus.

The ultimate effect of these conditions is to place each partner at the mercy of his fellow firm members. The

withdrawal of a partner's personal and financial interest at a critical period might wreck an otherwise profitable business; and even worse an unwise contract or other agreement entered into by one partner is absolutely binding upon all.

The third basic business form is the corporation. To begin with, it has the legal right to be regarded as an individual, entirely separate and independent of the persons who own the corporate shares. That is, in its relations with others, this association of persons is privileged to act as a separate unit.

Two highly important results of this condition may be observed: first, the death of part owners, or the assignment or transfer of their interest does not in the slightest affect the continuing policy and existence of the corporation, no accounting can be demanded, and no raid can be made upon the invested capital; and secondly, individual stockholders are not in general responsible or financially liable for any acts, debts or wrongs of their corporation.

No Personal Liability

This latter distinction is peculiar to the corporate form, is possessed by it alone of all the forms of the business unit, and is absolutely legal. No personal liability for corporate acts . . . . can words fully express the far-reaching effects of this tremendously precious privilege?

If a partnership incur heavy debts and become insolvent, the wealth of every individual member may be attached up to the amount of the liability. The sole proprietor may forfeit every worldly possession as penalty for a business error. But the corporation serenely goes its way through all ordinary difficulties.

Regardless of the magnitude of a corporate failure, owners of its stock are free from the danger of loss of personal funds or property, other than their investment in the losing venture. As against this advantage, taxation of corporations is at present heavy, their affairs are more or less exposed to the pitiless scrutiny of officials, competitors and the public, and there is an increasing tendency to regulate them strictly.

What, then, is the best form for a contractor? In general, the choice of sole proprietorship, corporation, or partnership will depend upon the type and volume of business to be handled, and upon special individual conditions. Obviously, it is folly to pay a lawyer several hundred dollars to supervise legal details, install a cumbersome accounting system to meet tax requirements, and pay heavily to the government on excess profits, if the present and future ambition of the concern is limited to fifty or a hundred small house jobs a year. The man who is content to drift along with no vision of future greatness can well remain a sole proprietor, or member of a partnership. But few contractors are without a very robust ambition, and are more likely to attempt to grow too fast rather than the reverse!

Large Organizations

The electragist whose aim is a fairly large organization is in almost every case wise in incorporating, for in handling of big open-competition contracts there is altogether too much chance for some catastrophe to occur in spite of painstaking care and supervision.

A sudden loss might wipe out the savings of years of an individual, leaving him to face old age penniless, but thanks to corporate advantages such a blow may result in mere temporary embarrassment, or at most in reorganization.

Corporations rarely liquidate involuntarily, and in any case the private wealth of the stockholders remains secure. This is not being stressed simply as an easy way for irresponsible promoters to avoid deserved trouble, but it is worth pointing out that a corporation can survive blows that would absolutely destroy an individual with equal actual assets.

The sole proprietor who meets with financial reverses and becomes even temporarily insolvent suddenly finds his bank account, his home, his car, or any other known tangible assets tied up by energetic creditors. The same danger awaits partners.

Solving Difficulties

On the other hand, the corporation in difficulty simply sends its treasurer to call on insistent creditors, with a story somewhat like this. "We are sorry that just at present we have not the funds to meet your bills. Frankly, if you petition us into bankruptcy our corporation will not be able to pay ten cents on the dollar. If, however, you will give us credit for the next year, we are confident that we can pay in full. Please give us a chance."

Granted that the corporation officials are really sincere in their intention to rebuild, and that they have an honorable prior record, it would be a foolish creditor who would force matters, ignore prospects of payment in full, and grasp the possible ten percent. He is sure to realize that the men behind the corporation are not personally liable for the debts.

Where bankruptcy proceedings against individuals may net payment in full, the same line of action against a corporation results usually in a meagre return. And so, fairly or unfairly, the corporation has a decided financial advantage over its rival business forms.

It is not too much to say, then, that the electragist who expects to grow, who realizes that sooner or later he may involuntarily find trouble, and who wishes to survive such hard times to profit in later days of plenty, will make no great mistake in adopting the corporate form.

A Word of Warning

There is one word of warning, however. The sole proprietor who has poor credit standing as an individual may find it hard to secure credit for a corporation which he heads. Because of the unlimited liability feature, many jobbers and agents prefer business relations with partnerships or individuals to contact with the same men grouped in a questionable corporation.

If a corporation is organized or backed by a person whose credit as an individual business man is open to suspicion, prospective creditors are far less likely to trust him behind the added cloak of corporate limitation. So the electragist who fails as an individual is not going to gain needed credit simply by incorporating his company.

As to the actual details of incorporation, the breadth of operation to be granted by the charter, the issue of stock, and the legal aspects and formalities of the organization should in every case be supervised by a capable lawyer. Improper attention to minute details at the start may cause annoyance and inconvenience later. An attorney, versed in the laws of the state for incorporation and acquainted with ways and means to advantageously utilize the statutes, regulations and customs is well worth whatever fee he may demand.

Of primary importance to every business is the investment of sufficient capital, regardless of whether the financing

of sole proprietorship, partnership or corporation is concerned. Basically the amount of money required to carry a specified amount of business is the same for all three classifications.

How much capital? The contractor who is looking for a bank loan to carry part of his burden will find that the officials take a very special interest in the ratio of yearly volume to actual invested capital. Bankers, from their wealth of experience, have reached the conclusion that in general an electragist should have an annual volume of business about five times his investment.

Capital Needed

The basic reasoning behind this is necessarily approximate. Assume that a contractor is doing a $100,000 annual business. Half is probably acquired in the form of fairly large contracts in the late winter, starts as soon as the frost is out of the ground, and is nearing completion in the fall. During the summer other work has started on which a small reserve has been built up, material and labor expense incurred, etc., but this is mostly balanced by the termination of work started during the previous fall and early winter. In the main, the financing of the half of the volume almost completed in the fall is taken as safely representing the general condition.

Now, with $100,000 volume, it is entirely probable that during a considerable part of the summer and fall payroll will run about $1,200 a week. Overhead for such a business is conservatively $1,300 a month, and might be considerably more. Reserve on the average is 15 percent of the value of work installed on unfinished jobs at a given date.

Financing Current Business

To finance the work at this busy period we therefore must have sufficient capital to cover the following:

Payroll for month	$ 4,800
Overhead for month	1,300
Reserve on $50,000	7,500
Total	$13,600

In addition, no business man carrying such a volume would feel safe with less than $2,500 in the bank at the end of a month, to meet sudden emergencies, such as the failure of payments to arrive on time.

Therefore, the treasurer of the company should have a minimum available capital of $13,600 plus $2,500, or $16,100 to finance a $100,000 business during the busy season; or, to put it another way, his company should not attempt to swing a volume greater than six times the value of the invested capital. Of course, any earned surplus may to all intents be added to invested funds to determine an arbitrary capital available for financing.

Now note that in the above calculations not one cent is included for payments on material purchased. In other words, the hypothetical contractor of our example has the confidence of his creditors, jobbers, manufacturers, etc. —to such an extent that he can secure credit for 60 or 90 days, or, to be more general, until he receives payments enough on his monthly requests to cover purchases of material for both jobs and stock.

Additional Capital

Usually, when carrying such a volume of business, an additional $2,000 to $4,000 of capital must be available to meet pressure from insistent creditors, who demand payment in 30 days or less. This is particularly true if the company discounts part or all of its bills.

Adding this fund for material purchases to the $16,100 minimum, we have a total capital requirement of approximately $20,000 to meet all ordinary conditions. This, then, indicates that the properly financed electragist will do an annual volume of about five times his invested capital. It is a safe and wise rule.

Of course men still start on the proverbial "shoe string," but the investigations of credit institutions show an extremely great mortality among companies poorly financed in relation to their volume. Some survive, but by far the larger number struggle along with too big a gross business until some contingency arises which cannot be met —and then oblivion.

This does not mean that the man with $1,000 or $2,000 has no right to enter business, for if he observes reasonable precautions he can be comparatively as sound financially as the million dollar corporation, and perhaps more so.

For instance, a contractor with $2,000 capital, who cuts his overhead ruthlessly in order to make his start, and who handles small jobbing work where payments are quick and no reserve is tied up can, with care, safely swing an annual business of $15,000 to $20,000. This is particularly true if the financial management impresses the jobber sufficiently to assure extended credit at times of peak payroll expense. In other words, for a small business very carefully handled an annual volume ten times the capital may be carried.

As the business rises to $30,000, $40,000 and higher, the fluctuation in payroll totals, office costs and reserves become so formidable that the ratio of volume to capital should never reach ten, and should rarely exceed six.

Choosing a Bank

Having established his organization and raised the capital he desires, the contractor is next in extreme need of a bank wherein to deposit his money and obtain service. While banking relations will be considered in detail in the second article of this series, it is pertinent to consider the initial choice of a bank at this point.

Before opening his account, the electragist can well turn momentarily selfish and ask himself, "Which bank will lend me the most prestige, and serve me best?"

This matter of prestige is peculiar. The man who is seen frequently in the presence of the great, regardless of his actual qualifications, derives certain respect from the association, and may also be inspired to rise above mediocrity to actual greatness himself.

So, too, the contractor who has the name of a truly notable bank upon his checks is advertising to all who read that he is associated with winners, and that he appreciates success enough to court contact with those who have risen high.

A Financial Adviser

The very fact that he has an account opens the doors of opportunity to consult with men of proven and distinguished financial ability. If the bank account is the key to such privileges, why not deposit where the best advisers are available?

A second consideration is—will this bank be friendly to a small, struggling business man? Are they anxious for me to grow, or will they just consider me a nuisance?

There is room for doubt that certain banks which spend thousands of dollars to advertise their friendliness toward

the small depositor are entirely sincere. In print they are most magnanimous; actually they give their small clients only the most superficial attention when they ask for the promised service.

A little inquiry among established business men will disclose which banks generally show a cooperative spirit and place their executive officers at the service of large and small depositors alike.

In short, find the bank with the greatest prestige, and the best spirit, deposit the treasured capital, and then use to the limit every helpful facility the institution offers.

A far-reaching policy which should be inaugurated at the very start is the energetic collection of due accounts. If customers are trained from the very beginning to pay promptly, credit difficulties over a period of years will be negligible. On the other hand the contractor who is initially careless in his collections will find it more and more troublesome to speed up payments during time of need.

Importance of Collections

The very nature of the contracting industry, where work once installed cannot be conveniently or wisely removed, and where business is often done with real estate men and general contractors pushing speculative ventures, renders a policy of 60 or 90 day credit extremely unwise. Yet how many electragists consistently follow up their accounts as soon as they gather 30 days dust? The sooner money is collected on construction bills, the less danger there is that property will be transferred to new owners, that speculative developments will meet with failure, or that other difficulties will arise to render final payment impossible without legal action.

Lax Bill Collectors

And anyhow, doesn't the average customer get a decidedly poor impression of a contractor who is lax in collecting his due bills? Every client knows that the electragist must somehow meet his payroll and his own operating bills, and realizes that he needs cold cash to do it with, but if he makes no effort to collect, payment will probably be delayed until it is demanded. Customers develop 30-day, 60-day or 90-day habits as the contractor gives the opportunity.

The writer is certain that every desirable customer will respect the business sense of a contractor much more if he insists upon payment within 30 days, and he will lose few if any accounts.

At that, the customer who will not pay in a reasonable time is worthless, so the sooner he is insulted by a demand for prompt payment the better for the electragist's bank account and reputation.

Of great importance to the conduct of any business is adequate insurance, for if this beneficial protection is not utilized a serious loss might at some time cause ruin. The contractor is concerned with protection for his materials, real property, personnel, payroll and public, all of which are exposed to danger. Each of these will be very briefly considered, principally as to yearly costs.

In many states, liability insurance protecting employees and the public is compulsory. Danger from accident cannot be eliminated, and with the tendency of present day laws to favor the employee, the payment of one sizable claim under so-called common law might bankrupt a small uninsured contractor. Even in states where this insurance is not compulsory it is wiser to voluntarily pay about one dollar per hundred dollars of payroll for coverage and be secure than to take a chance and perhaps lose everything.

Insurance Vital

Insurance of property and stock against fire and theft are routine propositions which should nevertheless be attended to at the very start. The cost is small, the protection great. Fire rates upon furniture and stock will run from about $10 per $1,000 upward depending upon the location, adequacy of city fire protection, and type of construction.

Payroll insurance, while not universally accepted as a necessity, is reasonably priced and in days when daring robberies occur in small towns as well as the cities is deserving of adoption. A fair rate is $10 per $1,000 of payroll in process of transportation, with an additional $11 per $1,000 if coverage is to extend to the payroll while it is being kept in the office safe.

Perhaps the most important insurance of all should cover valuable firm members. Material may be destroyed, but can always be replaced; so can a stolen payroll. But very often there is no earthly compensation for the death of a partner, no chance to quickly and easily replace him, and consequently the business suffers a very severe loss in money, prestige and efficiency.

Personnel Insurance

The value of personnel insurance, which is nothing more than life insurance at the usual rates made payable to the corporation or firm, can hardly be estimated. For example, two men form an excellent team, and the deficiencies of the one are so balanced by marked abilities of the other that their continued cooperation is vital to the success of their corporation. United they stand, divided they fall.

If each one takes out a policy of suitable face value, and arranges for payment to the company at death, the concern is assured of at least partial compensation for his loss when it finally comes. This insurance will make possible the liquidation of the business without financial loss to those concerned, or it may permit the surviving man to purchase from the widow the stock of the deceased, or it may provide funds for the employment and training of a substitute for the former firm member.

An Investment

Since life insurance policies have definite surrender values if they are discounted, the money invested by the company is not lost should an emergency arise requiring withdrawal of one of the men assured. At all times this insurance surrender value exists as an asset of the company, to be drawn upon in time of need, and in any case to appear in the financial statement as a reserve. What is more, its presence upon the statement is a mute indication to all concerned that the company has the wisdom to provide systematically for the loss it must eventually face when death claims an important man.

England's Installment Installations

Easy payment systems for electrical installations, along the lines of the A. E. I. time-payment plan recently announced, may come into use in England. *The Electrical Times* (London) quotes a committee of the Electrical Contractors' Association of England as advising study of the subject with the hope that it may overcome the difficulty as regards the initial cost of installations.

New Method for Lighting Window Signs

By JOHN A. HOEVELER,
Manager, Engineering Department,
Pittsburgh Reflector Company

MERCHANTS seem to have a prepossession in favor of signs painted as a border along the top of the plate glass of the show window. This is particularly true of drug, cigar, delicatessen, candy and grocery stores. Usually these signs are transparencies and invariably the merchant wishes to have them illuminated at night. Moreover, he usually expects his window lighting equipment to perform the dual service of illuminating the sign as well as the display.

Where the sign transparency is run as a border below the transom bar of the window, and there is space above the sign, it is a quite simple matter to illuminate the sign effectively. This may be accomplished by installing the reflectors above the level of the top of the sign as shown diagramatically in Fig. 1. By this method the "spill" light which would ordinarily be wasted outside the show window is utilized for lighting the sign. Care, however, must be exercised not to space reflectors too far apart. Otherwise the lighting of the sign will not be uniform.

In a great many instances the ceiling of the show window is flush with the top of the sign thereby barring out the use of silver-plated glass reflectors because of their opacity. In these windows, therefore, opal and prismatic glass reflectors or bare lamps have been used heretofore. Recently, however, there has been perfected a silver-plated glass reflector, the back of which contains a ribbed clear glass panel which provides for the correct amount of transmitted light for the illumination of the sign. The light distribution curve of this reflector is shown in Fig. 2. The reflector is designed particularly for use with the new 100 watt inside frosted A-23 Mazda lamp.

To design window lighting employing this reflector is somewhat more complicated than ordinary window installation design. It is not only necessary to determine the proper spacing of reflectors to give the desired distribution of light on the trim but, in addition, reflectors must be carefully located with respect to the sign which is to be illuminated. When the reflector is placed close to the plate glass the bottom edge of the ribbed glass panel of the reflector throws the line shadow on the plate glass characteristic of all window reflectors.

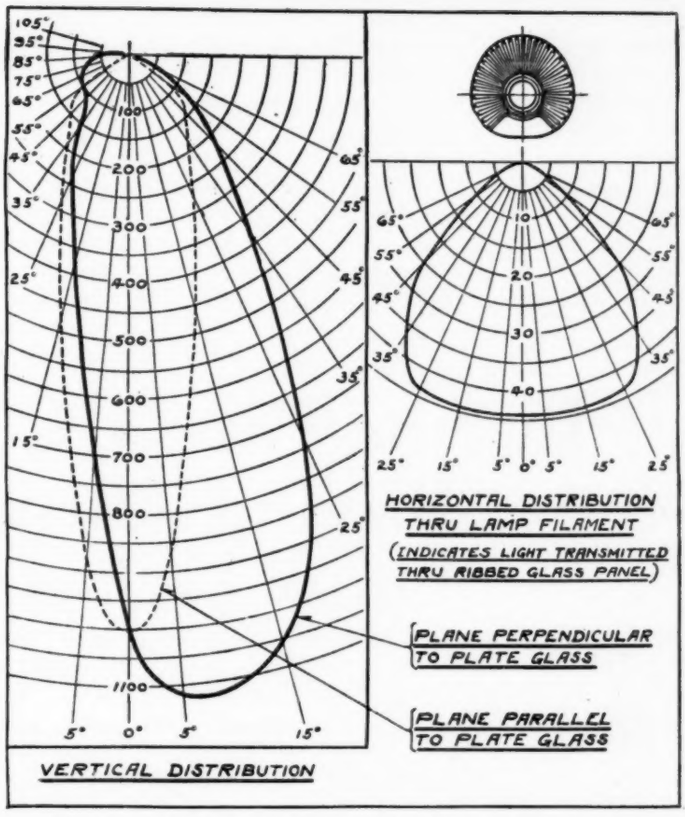


Fig. 2—Light distribution curve of silvered glass reflector for lighting window transparencies

As the reflector is moved away from the plate glass this line broadens out and becomes less pronounced. When the center line of the reflector is moved 12 in. from the plate glass the line is broadened out so as to practically disappear. While this line may not be objectionable to many users, particularly where the sign is of very dense paint, it will be best to so place reflectors that this shadow line falls below the bottom line of the sign. To determine the proper location of reflectors the following table will be found useful:

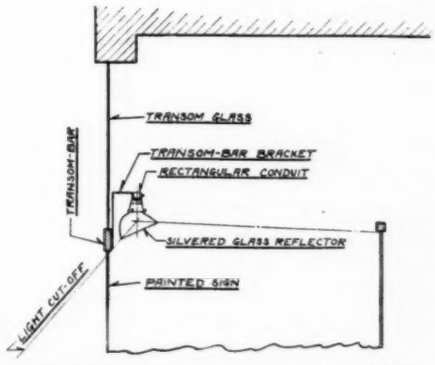


Fig. 1—Illustrates method of installing silvered glass reflectors so as to illuminate painted sign on plate glass as well as window trim

Distance A (Maximum depth of sign)	Distance B (Distance, center line of reflector from plate glass)	Distance C (Maximum spacing between Reflectors)
12 in.	6 in.	12 in.
13 "	7 "	14 "
14 "	8 "	16 "
15 "	9 "	18 "
16 "	10 "	20 "
18 "	12 "	24 "

Distance A is the distance below top of sign that the shadow line falls on the plate glass when the reflector and supporting conduit is attached directly to the flush ceiling. It therefore marks the maximum depth of sign permissible in order to avoid having the shadow line appear on the sign. Therefore in locating reflectors they should be removed from the plate glass the distance corresponding to maximum depth of sign as given in column headed "Distance B."

Spacing between reflectors given in column headed "Distance C" are maximum values and in general closer spac-

ings are advised. In fact, since the wattage is only 100 it would seem that 12-in. spacing between reflectors should be standardized upon except in locations where the general standard of window lighting is very low or in the case of very small show windows.

As an example assume that we have a window to be illuminated in which the sign is 14 in. deep. Referring to the column in table headed "Distance A" find 14 in. and run across to column headed "Distance B" and it will be noted that the center line of reflectors should be removed from the plate glass at least 8 in. Running across to column headed "Distance C" it will be noted that the maximum spacing between reflectors should not exceed 16 in. In other words, if the reflectors are located not more than 16 in. on centers and the center line of reflectors removed 8 in. from the plate glass, the sign will be properly illuminated.

For a deeper sign, it will be noted from the table, that the center line of the reflectors must be moved further from the plate glass and that this procedure permits increasing the spacing between units when desirable.

Buying Direct Costs More Than Buying Through Jobbers

The Jobber Exists Only Because He Renders a Vital Economic Function and Affords the Least Expensive Method of Distribution Yet Discovered

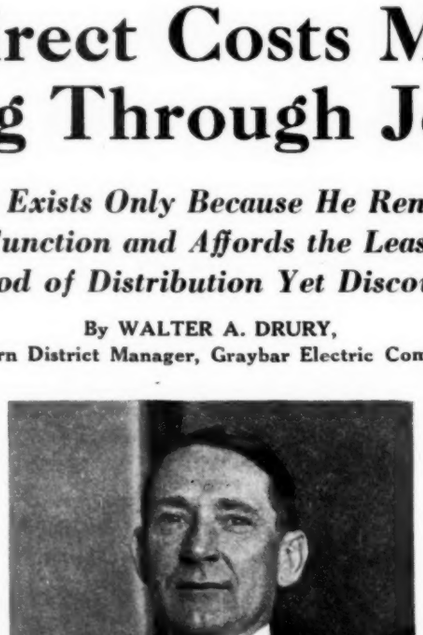
By WALTER A. DRURY,
Eastern District Manager, Graybar Electric Company

"NO SIR," said John Smith, electrical contractor in Kansas City. "I can't wire this building in less than a month. I must send to Freeport, Conn. for a supply of switches, to Fairtown, N. Y. for my wire and outlet boxes, to Johnsville, N. J. for fixtures. If I'm lucky I'll have all the supplies together in two weeks or so, and then I will start work on your job."

Some contractor! you're thinking, and we admit that was a story of what-might-have-been were it not for the services performed by electrical supply jobbers.

Take that imaginary case. In the first place there would be the delayed turnover of the contractor's money in the case of piecemeal ordering, together with greater clerical expense. Or, if he carried considerable stocks, he would only tie up capital and run the risk of loss or damage in storage. Second, there is the inconvenience, and in commercial or industrial jobs the productive loss to the waiting customer. Third, there is the greatly increased cost of the supplies bought from manufacturers in small lots, the relatively higher packing and carrying charges—in short, the economic waste to maker, carrier and user.

These disadvantages would become aggravated in a country of great distances like our own and in a day when specialization permeates manufacturing



Walter Drury

so that even small supply items are made in separate and widely distant factories. The contractor would spend half his time as a purchasing agent, listening to the conflicting claims of salesmen, trying to select supplies of suitable quality—and he would find himself either under-ordering, with consequent delays in his work, or over-ordering and tying up money in stocks that might deteriorate or become obsolete.

Now look at this state of affairs from the manufacturer's viewpoint. How could he hope to have a stable dependable market? It would take him years of expensive sales work to build up a trade, and then it would not be of such a character as would enable him to sufficiently schedule his production and raw material purchasing one, two, or more years ahead.

Manufacturers market their products through distributors for just one reason —because it is cheaper than selling direct. Whenever any manufacturer can prove to his own satisfaction that he can sell and service the electragist direct more economically than he can through the distributor, that day will his selling force be enlarged and the distributor discarded.

We have said that specialization pervades manufacturing. It is not surprising that the industrial scheme should have developed another specialist as a distributor, one who would give his undivided attention to working out better warehousing methods and who would perform his functions more efficiently and economically than could either manufacturer or user. This is all in the interest of putting a man where his ability naturally belongs, the producer in his factory, the user or retailer in his office or store and the distributor serving both.

As a result John Smith, that same Kansas City contractor, can now promise a quicker job. He can order in convenient quantities and get delivery on most items the same day. He buys from a concern which has already studied the market and selected supplies of reliable quality. He buys at fair prices.

And of course what holds for the Kansas City man is true for every contractor and wholesaler, industrial or utility buyer in the country—for they are all within easy reach of some efficient distributor.

The Trade Policy Committee of the Association of Electragists, International, recently reported that 85 percent of the purchases of its members were from electrical supply jobbers, and but 15 percent from manufacturers, which finding alone proves the economic status of the jobber. Those who doubt the distributor's economic performance need only imagine the expense and waste resulting from the thousands of electragists and dealers of this country purchasing their stocks, averaging 1,400 items, from seventy-five manufacturers scattered throughout thirty-five or more cities. The "goods in transit" investment of an electragist in most sections would, if he were to buy direct, amount to more than his present merchandise investment, and the losses in labor due to lack of materials would be enormous. Can any electragist imagine having time to supervise an operation if he had to carry on credit and trade relations with seventy-five suppliers scattered throughout the land?

John Smith didn't worry about securing the materials for the contract, referred to in the opening paragraph, as he knew Bill Brown, the local jobber, and Bill Brown knew him. For instance, if Smith had recently lost heavily by fire it wouldn't influence the jobber's attitude, for he knows Smith to be able, reliable and responsible, and gladly extends a sufficient line of credit. Had the contractor been doing business directly with manufacturers scattered throughout the United States, none of whom had any particular interest in his business, few of whom knew him personally, the story would undoubtedly be much different.

Close Relations

The contractor who has established proper business relations with a responsible jobber has a substantial capital investment in his business on which he earns but pays no dividend, and which has no voice in the management of the business. It is equivalent to a non-voting stock, sold at par, requiring no dividends.

Many contractors, within a convenient distance of jobbers' stocks, have found it much more economical to utilize the jobbers' stocks than to buy large quantities from manufacturers and operate their own storerooms. Too many look only at the prices on the invoice, forget all about trucking, rent, interest, depreciation, obsolescence, salaries and other items, which represent a goodly percentage of the original purchase price. Investigations on the part of several large contractors in New York City, made approximately five years ago, showed that it cost them from 14 percent to 21 percent to operate storerooms, which costs are much above the jobbers' charges for rendering prompt and efficient service.

The service of wholesale distributors in any line, exists and thrives only because it has been found to render a vital economic function. Modern industry, you may be sure, does not tolerate any member of the industrial family unless it can justify itself, and if the services of purchasing, warehousing and distributing could be dispensed with or if they could be carried on better and more cheaply by some other agency, you may be sure the wholesale distributor would long ago have disappeared.

But today more than ever the distributor seems to have come into his own. We hear a good deal now about hand to mouth buying, wisely resorted to by men who remember the consequences in 1920 of large inventories. What is the distributor if not an important instrument in making possible such a policy? He is the channel permitting an easy and steady flow of goods from maker to user so that the latter need order only for requirements immediately in prospect. The nearness of the distributor makes unnecessary any over-ordering for fear of delays in getting the goods when wanted.

That is one phase of electrical supply service—not merely a job of buying and selling supplies, but an opportunity to fit into the financial policy of our customers, to speed up the turnover of their investments, to select materials which best meet contractors' needs, consumers' requirements, and so make the electragist's business more profitable.

Educating the Public to Electrical Gifts

PERHAPS the reason electrical contractor - dealers do not get a bigger share of Christmas buying is because the public is more apt to think of electrical appliances as household "tools" than as appropriate Christmas gifts. Therefore it is necessary to educate them away from this attitude. Here is a copy of an attractive letter sent out by A. W. Furch, a dealer of Comfrey, Minn., which had that effect. And the unusual thing about this letter is that he explains that electrical appliances may be beautiful as well as useful.

A Christmas Letter

from

A. R. FURCH
COMFREY, MINN.

Electrical Gifts are Permanent Gifts

Gift Suggestions

Christmas Tree Outfits
Clothes Washers
Toasters
Waffle Irons
Table Grills
Table Stoves
Pie Ovens
Chafing Dishes

Percolators
Drink Mixers
Dish Washers
Fireless Cookers
Flashlights
Floor Waxers
Heat Sets
Ice Cream Freezers

Electric Irons
Electric Irons
Bridge Lamps
Table Lamps
Boudoir Lamps
Desk Lamps
Console Sets
Floor Lamps

Milk Warmers
Loud Speakers
Heating Pads
Heating Blankets
Electric Radiators
Battery Chargers
Battery Eliminators
Radio Sets

Radio Vacuum Tubes
Electric Ranges
Electric Refrigerators
Sewing Machines
Electric Curling Irons
Marcel Wavers
Vibrators
Hair Dryers

Buffing Wheels
Electric Toys
Electric Cigar Lighters
Vacuum Cleaners
Vacuum Bottles
Water Heaters
Manuel Iron Heaters

Dear Madam:

The thought behind the gift is the main thing; that is what endears it to the recipient and differentiates it from the indiscriminate purchases made only for duty's sake.

Electrical Gifts are not in this class. The very fact that they are electrical indicates a desire to give something out of the ordinary, something unexpected.

But the big thing about an Electrical Gift is its lasting value and the daily pleasure to be had from its use. Most gifts are perishable but the Electrical Gift will last for years, bearing ample testimony of the thoughtfulness of the giver.

We can be of help to you in the selection of your Electrical Gifts, a few suggestions being given opposite. They will cost no more than non-electrical gifts, sometimes not as much, and will satisfy the desires of recipients who are loath to buy for themselves.

Check the goods in which you are interested and we will be glad to quote prices by return mail. With this information you can plan your Christmas buying on a business basis and thus leave nothing to chance at the last moment.

But even better would be a personal inspection of our Christmas stock. The articles enumerated represent only a small part of our offerings among which you will find the appropriate gift for your purse and your purpose. And please remember as our guest-buyer you are under no obligation to purchase.

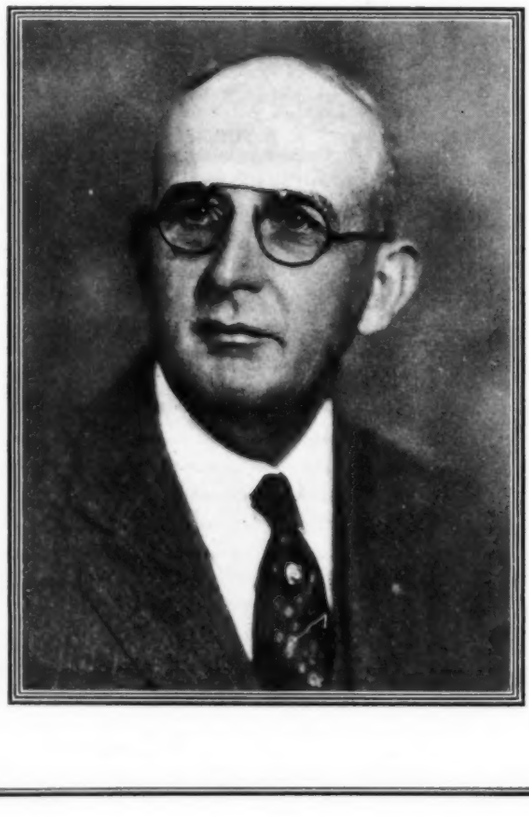
Very truly yours,

A. R. FURCH.

Edgar Rice, Alton

SEVERAL months ago when there was formed the Illinois State Association of Electragists, the man settled on for the presidency of the new organization was Edgar Rice, of Alton. This was in view of both his personal business success and the strong interest he has had at all times in association work. Mr. Rice was born in Mississippi in 1871, but came north at a very early age. His first venture in earning a living was in the plumbing trade, but after two years of it he deserted the pipe wrench—there was no such thing as electrical pipe in those days—for a job with a central station. His company did both gas and electrical work, but he specialized on the latter and in that job got his initial experience in house wiring, since the lighting companies at that time did a complete electrical job from supplying the current to making the installation. He remained with the central station until 1903 with the exception of a period during the Spanish-American War when he served in the U. S. Navy. Upon leaving the employ of the lighting company, he turned his attention to the jobbing business and for a year called on contractors here, there and everywhere as salesman for the Commercial Electrical Supply Company of St. Louis. His contact with the contracting industry evidently convinced him that it was a field worthy of cultivation and in a little more than a year after leaving the central station he was back in Alton in business for himself as a contractor. At this time, in 1904, he joined the Association of Electragists, International, and has retained his membership ever since, ranking as one of the pioneer Illinois members of the association.

Electragists You Should Know



Arthur L. Cope, Alliance

THE Cope Electric Company, Alliance, Ohio, operates on two principles, which are expressed by its president, Arthur L. Cope, as follows: "We believe that service is our best advertisement," and "Our obligation to a customer, no matter how small or how large, does not cease until he is completely satisfied." The strict adherence to these two business axioms is probably largely responsible for the rise of Mr. Cope's business to the position of one of the largest in his section of the state. Mr. Cope was born in 1873 in the village of Smithfield, Ohio, and received a high school education there. Upon his graduation he obtained a clerking job in a general store and after two years of that went to Alliance to take a position as salesman for a wholesale grocery. Several years of hard work in that job left him apparently well settled in a safe and established industry, but the lure of the uncertain infant, electricity, drew him away and he went into the electrical field as a lighting fixture salesman. In 1906 he formed an electrical firm with John J. Moser under the imposing name of Cope & Moser. However, the name was the most imposing thing about the business, for it started with a capital, all borrowed, of $300 and with total equipment consisting of a pushcart. When his partner died two years later the business was already making good headway and he took it over under the name of the Cope Electric Company. The company was incorporated in 1916 and has grown each year until now it employs approximately thirty men and does a volume of $200,000 annually. Mr. Cope is vice president and a director of the Ace Section of the Association of Electragists and is a member of his local Chamber of Commerce.

Central Station Lamp Policy

In several places the free renewal and cut price lamp distribution policies of the central stations are meeting with opposition on the part of dealers. In one case the utility has been haled before the state commission, in another a conference is in progress, but in many places the dealers, especially the non-electrical dealers, are fighting these unfair practices with inferior lamps.

In the January Bulletin of the National Electric Light Association there appeared the following statement on "Central Station Lamp Policy," prepared under the auspices of the Association's lamp committee, of which Frank W. Smith is chairman.

While this statement is purely one of fact and does not attempt to lay down a policy on this subject, it is significant that the N. E. L. A. should at this time bring these facts before its membership.

It has been a long, up-hill fight to persuade the central stations that unfair lamp policies were detrimental to themselves. Only a few central stations have refused to follow the lead of the majority but the publication of such facts gives reason to suppose that they too will fall in line.—The Editor.

LAMP policies of central stations in this country are usually of one or the other following kinds:

Sale at standard prices

Sale at cut prices

Free renewal or supply as a part of the service

No merchandising

In a few cases franchise or regulatory conditions dictate lamp policies. In most instances, however, the policies have been adopted as a result of conviction on the part of central station managers that one or another policy is preferable.

Some of the lamp manufacturers have estimated that lamps are supplied to customers (exclusive of private plants) through the several channels as follows:

Central stations	24%
Dealers and jobbers	73%
Direct from lamp manufacturers	3%

About two-thirds of the sales by dealers and jobbers are retail. Of these retail sales it is estimated that about two-thirds are made by electrical stores and one-eighth by hardware stores.

Lamps of other than Mazda brands, forming perhaps 15 percent of the total lamps sold, are distributed more largely through non-electrical stores, it being estimated that one-third are sold through hardware stores, one-seventh through low-price chain stores and only about one-sixth through electrical stores.

Jobbers and dealers perform a useful service in making available places where customers may obtain lamps conveniently. Their interest is largely in the profit derived from lamp sales. They cannot be expected to give the same proportional attention to lamps that central stations should give in view of the dependence of a large part of their service upon the suitability and quality of the lamps.

While central stations as a whole are supplying their consumers with nearly one-quarter of their lamp requirements, some central stations feel that they should not merchandise lamps, as their business is primarily to supply current and the supply of lamps is well cared for by the dealers and jobbers in the town. Other central stations supply lamps at standard prices, but without an aggressive sales policy, merely as a convenience to the consumer. Some central stations, however, believe that an aggressive merchandising policy at standard prices will not only stimulate the consumer into using more light to his advantage, but also will make the dealers and jobbers more active, to the benefit of all concerned.

Then there are those central stations who believe that cut prices in lamps are of advantage, the majority, however, not having an aggressive sales policy. The usual result is that the dealers and jobbers in such communities sell a large number of the cheaper grade of lamps in order to meet the cut prices, a policy which is not conducive to the maintenance of the good will of the dealers and jobbers.

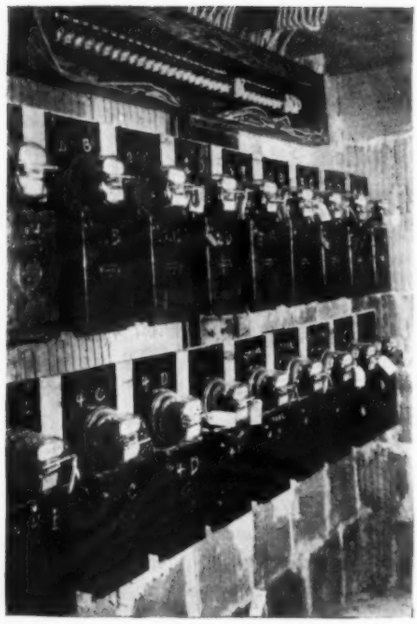
The supply of lamps as a part of the service free or at a differential price based on renewal cost per kw.hr., is practised by a few central stations in the larger cities. These companies feel that their customers receive a better lamp service, and that the cost of the lamps to the company is justified by the greater satisfaction to customers and by the additional current consumed by lamps in sockets that under another policy would be likely to remain unfilled for considerable periods.

No data are available to show that any one policy is superior to the other lamp policies. Comparisons among cities in which the several policies are followed are complicated by differences in local conditions which render comparisons impracticable. It is the consensus, however, of those who have studied the problem that conditions are best where, whatever the lamp supply policy, the central station interests itself to see that suitable and good quality lamps are supplied to customers. An aggressive lamp distributing practice, whether by the central station or by jobbers and dealers, employing good quality lamps and making them easily and generally available to customers, may be relied upon to bring about better lighting conditions and more use of current for lighting than result from a policy of *laissez faire*.

New Method of Installing Apartment House Meters

Labor Costs Cut Considerably by Scheme of Mounting Apartment House Meters and Switches on Box Which Affords Continuous Channel for Feed Wires

By PAUL B. NELSON



Method of installing meter service switches developed by electrical contractors in Westchester County, N. Y. The installation shown is for an 18-family apartment house, and is located in specially built room in basement

A NEW method of mounting apartment house meter service switches has been developed by electrical contractors in Westchester County, New York. The installation described here, which is located in Larchmont, N. Y., is typical.

The entire group of meter service switches, one for each of the 18 apartments, is located in a small room in the basement, built expressly for the electric and gas meters. These meter switches are placed in two rows of nine each; each row is fed from a 3-pole 60-amp. externally operated fused knife switch by three No. 8 wires. These leads are continuous and loop into each switch for connection. The two 60-amp. switches are fed from the light entrance switch, located in an adjoining room, by three No. 2 wires, enclosed in 1½-in. conduit.

Each row of meter service switches is mounted on a trough 7 ft. 2¾ in. long, 8½ in. wide and 4⅜ in. deep, the switches being secured to it by machine screws in tapped holes in the flange of the trough. The spaces between the service switches are covered by steel plates so that the entire trough is covered when all of the meter switches are in place.

All branch fuse blocks are located in a cutout box. This box is placed directly above the two rows of switches and connects to them by means of a connecting trough. The cutout box has a 3-in. gutter on the four sides and sheet steel barriers between the gutter and the cutouts. The box is fitted with the usual trim and door.

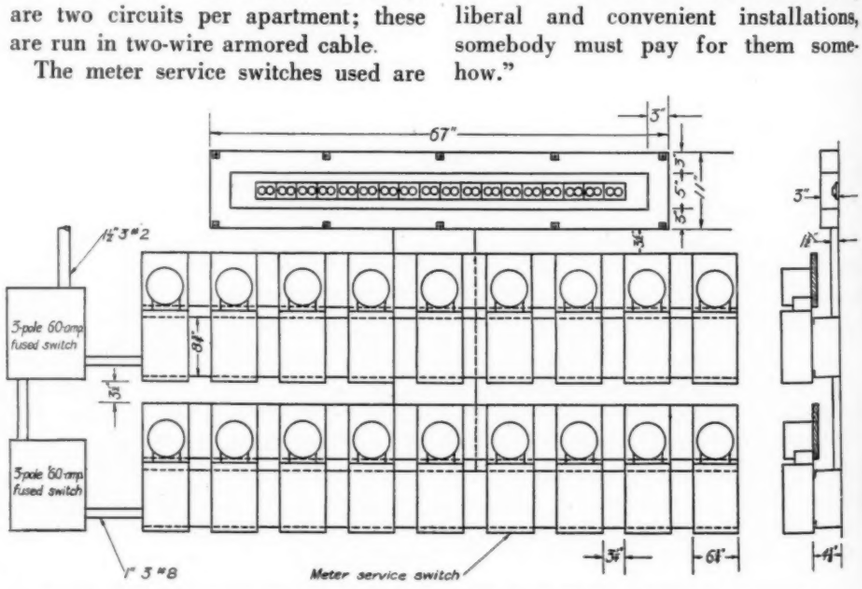
All branch circuit fuses are located in this box instead of placing a lighting panel or cutout in the apartment to be served. One side of each branch circuit is tapped solid to neutral conductor from the meter service switch. There are two circuits per apartment; these are run in two-wire armored cable.

The meter service switches used are provided with an extension on the back of steel box and the meters are mounted on this extension. In this installation a continuous ¾-in. pine board was secured to the backs of these meter "pans" in order to provide rigidity.

This method of installing meter service switches results in a very workmanlike job and is said to effect a considerable saving in labor.

England Says Adequate Wiring Can't Be Cheap

"In our last issue," says *The Electrical Contractor*, an English publication, "we printed some figures on wiring costs in various localities and nobody acquainted with the cost of material and labour will dispute the fact that these prices represent quotations cut to the bone. But, while installation work (of a sort) may be obtained for these prices, such installations will not represent electrification on a liberal scale with umpteen outlets. And there's the rub! If we are to have substantial, liberal and convenient installations, somebody must pay for them somehow."



Front and side views of meter service switch installation showing dimensions

Chats on the National Electrical Code

A Monthly Discussion of Wiring Practice and Questions of Interpretation, Presented with a View Toward Encouraging a Better Understanding of the Industry's Most Important Set of Rules

By J. C. FORSYTH,
Supervising Engineer, Bureau of Electricity, N. Y. Board of Fire Underwriters

Conductors in Metal Raceways

Rule 504-F reads—"Not more than four No. 14 wires, nor any circuit protected by fuses larger than 20 amp. at 125 volts or 10 amp. at 250 volts, shall be placed in any metal raceway." The question is often raised as to why the carrying capacity of the conductors allowed in a metal raceway should be limited to 20 amp. at 125 volts or 10 amp. at 250 volts when the raceway is sufficiently large to receive No. 8 conductors; and also why it is not permissible to employ a metal raceway large enough to properly take more than four No. 14 wires.

The ampere limitation was adopted largely because of the weight of metal used in the construction of these raceways. The thickness of metal required is .04. This is much lighter than is required for rigid conduit, but is supposed to be sufficiently heavy to withstand the ordinary burnouts on wires when protected by fuses of the given ratings. If heavier metal could be employed it would, no doubt, be permissible to install larger conductors.

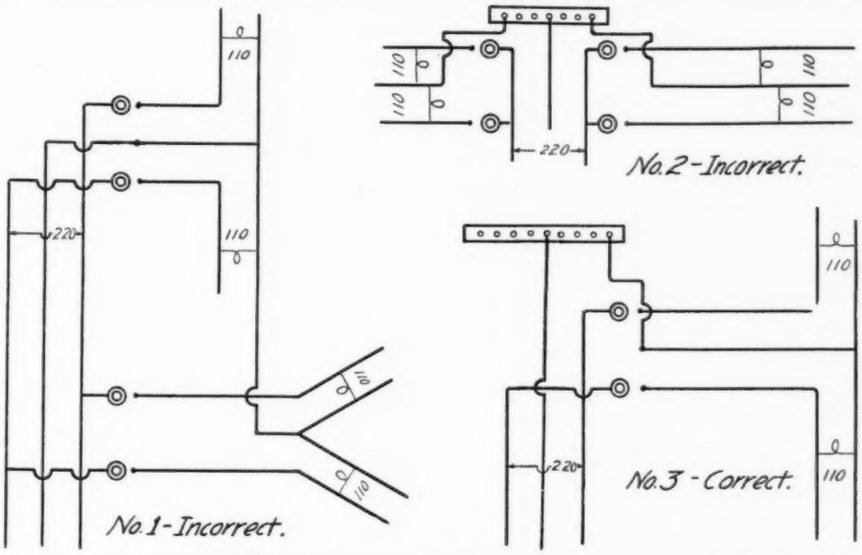
As to the number of wires allowed in a single raceway it is only necessary to turn to Rule 504-J which permits ten No. 14 wires in a single compartment of a combination surface raceway system. The number of wires allowed under 504-F was limited by the internal area of the raceway and not because a greater number would not be permissible if sufficient room were provided.

Three Wire Branch Circuits

There are many differences of opinion as to the meaning of Rule 807-E which reads—"Three wire branch circuits may be run from direct current or single phase alternating current systems having a grounded neutral, in which case the neutrals of the branch circuits shall not be inter-connected except at the center of distribution." Some inspection departments contend, particularly where the wiring is concealed and where fixtures are installed on the outlets, that three wire circuits should not be permitted or, if allowed, that all four wires of the branch circuits should be carried back to the point of distribution and the neutral conductors secured under binding screws. A suggestion has been made that the following sentence be added to this section "Interconnecting shall be by means of screw and washer for each conductor." This seems to eliminate any advantage of three wire distributing circuits under the conditions above mentioned.

The intent of this section, to my mind, was to allow three wire circuits to be extended from the cutout cabinet to any outlet where it was desired, to branch off to two or more distributing circuits, thus doing away with the necessity of extending the fourth wire from the cabinet to the outlet selected for distribution. The inter-connection of ground conductors of branch circuits was prohibited except at the center of distribution for the purpose of preventing three wire circuit connections such as shown in sketch No. 1. Contractors often attempt to connect three wire circuits as shown in sketch No. 2. This method is incorrect and cannot be approved, as it is not a true three wire circuit. All three wire distributing circuits should be connected as shown in sketch No. 3.

The question has also been raised in this connection as to the method of connecting the neutral conductors in cutout cabinets. Some are insisting upon a bus bar being placed in the cabinet, this bus to be provided with sufficient number of connection points to accommodate all neutral conductors carried to it and prohibiting the splicing of these neutral circuit wires to the grounded feeder. This method does provide a neater and more workmanlike piece of work; but since no fuses are permitted in these grounded conductors and since soldered joints are permissible at all points I fail to see any log-



These three diagrams show two incorrect methods and the correct method of wiring three-wire branch circuits from d. c. or single phase a. c. current systems having a grounded neutral

ical ground on which an inspection department could refuse to approve properly soldered joints between the grounded conductors of branch circuits and feeders.

Armored Cable Installation Rules

Millions of feet of armored cable are installed each year and it has become a necessary part of practically every contractor's stock. The rules governing its installation are quite clear and fairly adequate. There are, however, many details of construction which various inspection departments have put into effect that often lead to disagreements with contractors because they are not uniformly adopted or enforced, but differ according to the ideas of the inspectors. It would, no doubt, surprise some contractors to know how many such inspection department made rules there are on cables alone. Here are a few of them:

Securing of the cable within 6 ft. of each outlet;

Boring of floor beams or slotting of beams;

Securing of cable in some places by straps, in others by staples or nails;

Protection of ends of cables in Gem-X or similar boxes by brass thimbles;

Requiring the unfilled opening in boxes to be covered by metal where the cable armor does not fully occupy the knockout space;

Requiring that when the cable is laid in channels in fireproof walls or ceilings to be covered by plaster of paris instead of plaster or cement;

Requiring that bends shall have not less than a 2½-in. radius instead of 1½-in. as permitted in the Code;

Refusing to permit leaded armored cable to be carried underground from a residence to a garage.

Fixture Supports

Rule 1403-F reads—"Where a gas pipe, outlet box, plate or other fitting which will provide proper support is required by this code or is present the fixture shall be attached thereto; otherwise the fixture shall be attached to a ⅞-inch block fastened between studs or floor timbers and flush with the back of the lathing, or if this method can not be employed a wooden base block not less than ¾-inch in thickness shall be provided."

As the requirements for all classes of wiring now call for outlet boxes or plates at all fixture outlets the above rule would seem to be very clear to the effect that fixtures must in all cases be secured directly to and be supported by such boxes or plates. In a recent questionnaire sent out by the Code Committee of the Eastern Association of Electrical Inspectors this inquiry was submitted: "Do you insist that all fixtures be supported from the outlet box?" There were sixty-seven replies received from inspectors of which twenty-three reported "No" and forty-four "Yes." This indicates in the districts covered by those who voted "No" that either the inspectors did not know the Code rule or were not enforcing it.

Where the fixture is fastened to the wall by wood screws it is seldom grounded and any person touching the fixture and a grounding medium is liable to receive an electric shock. It is recognized that there are difficulties in securing some types of fixtures to outlet boxes, but if the inspection departments made an honest effort to enforce the rule the fixture manufacturers would soon find some way to comply with it. Such differences of inspection requirements make it very difficult for contractors to properly compete with each other unless all competitors are fully aware of the deviations allowed from the rules by different inspectors. It is to correct these varying interpretations and to make as uniform as possible all applications of the Code that the Eastern Association of Electrical Inspectors was organized.

Wiring to Motion Picture Projectors

Rule 3502-B requiring that "Wires not smaller than No. 4 shall be employed to supply the projector outlet" was evidently written during the time when practically all moving picture projectors required from 50 to over 100 amp. for their successful operation. It was, therefore, entirely satisfactory to all concerned that a minimum wire size of No. 4 should be specified, but in this matter, as in many others, improvements have been made, and for numerous places and conditions, as incandescent lamp of from 500 watts to 1,000 watts capacity, is found to be sufficient.

We have, therefore, a dispute between the contractor and the inspector holding directly opposite views and yet both of them absolutely correct from their different angles of vision. The inspector insists on the installation of two No. 4 B. & S. wires to supply current to a 500 watt lamp because the Code says so, while the contractor claims the Code was not intended to apply to the case in question because to do so would be manifestly unfair and the Code was never intended to be unfair. The following suggestion has been made:

Add to the present rule the words "except where an incandescent lamp of not over 1,500 watts capacity will be employed as the source of light, wires not smaller than No. 12 may be installed." In this case at least the rules have not kept pace with the progress of the art.

Rubber Covered Wire in Conduit Under Cement Floors

The following question has been received: "Will rubber covered wire in conduit placed under 2 in. of concrete beneath a building be suitable for service wires leading from transformer vault to switchboard?"

The first sentence of Rule 503-I reads: "Conduit wire shall be of approved rubber-covered type, or, if in a permanently dry location, of the varnished cloth insulated type." While this rule does not specifically authorize the placing of rubber-covered wire in conduit where subject to moisture, it would seem to imply that such practise would be satisfactory. The first sentence of Rule 501-G reads: "Wires located in damp places or in buildings especially subject to moisture shall be of the rubber-covered type," which clearly allows rubber-covered wires to be used in damp places and buildings subject to moisture.

Experience shows, however, that where rubber-covered wire is installed in conduit underneath cement floors and where the conduit run is such as to retain any moisture that may find entrance to it either directly or through condensation such wire should be lead covered in order to secure continuity of service and to prevent the breakdown of insulation due to collection of water in the raceways. A break in the insulation or leakage through it sets up an electrolytic action which in time causes corrosion of the copper and a reduction in its carrying capacity.

The Law of Reading Contracts and Specifications

A Set of Specifications Is Not Necessarily the Same as a Contract, Except Under the Special Circumstances Which Are Explained in This Article

By LEO T. PARKER,
Attorney-at-Law, Cincinnati, Ohio

THE law is well established that, in the absence of a provision in a contract, the specifications cannot be referred to for the purpose of varying or restricting the contract. Furthermore, where there is a dispute between a contractor and an owner in which the contract and the specifications are involved, the contract alone and exclusively, and not the specifications, is binding.

On the other hand, where a contract stipulates the exact work that a contractor is to do, the specifications actually become a part of the contract, particularly for the reason that reference to the specifications is necessary to determine just what work, grade of material and workmanship the contractor agrees to perform.

In other words, the specifications serve the purpose of explaining and amplifying the contract, to which they refer, when the workmanship or grade of materials used are the source of a dispute. As a matter of fact the specifications show and disclose what the contract really is. But the specifications cannot add to the contract, unless by reading the contract itself it may be discovered that it is the express intentions of the parties that the specifications shall be referred to for that purpose.

In a quite recently decided case the Court said that it is an elementary and well established rule in the law of contracts that the plans and specifications referred to in a contract can serve no other purpose than to be a source of definite information as to how the work shall be done, and such specifications are foreign to the contract for all other purposes.

An example of this is given by the outcome of another litigation where the specifications contained a provision that the owner might, at his pleasure, annul the contract without incurring liability. This agreement was not included in the contract, and the Court held that the provision in the specification was not binding on the contractor.

In a similar litigation, the specifications contained the statement "All work to be guaranteed for one year from completion of the building." No mention of such a guarantee was contained in the contract. When the work was finished the owner attempted to hold the contractor to the guarantee specified in the specifications, but the Court held that he was not entitled to do so because the provision was not made a part of the contract.

A CONTRACTOR took a job whose specifications required that he guarantee all work for one year from the completion of the building. He refused to comply with this, claiming that he was standing on the exact terms of his contract. How did the Courts decide—for or against him? The answer to this question and to others along the same lines can be found in this article by a member of the Ohio bar.—The Editor.

Frequently controversies and disagreements arise between owners and contractors relative to the proper method of determining the exact amount of work which the contractor shall do. A review of a legal controversy, involving this point, probably will convey accurate information better than a mere explanation:

A firm of contractors entered into a contract with an owner, by which it was agreed that the contractors were to furnish all of the mason work, supervise the construction work, and furnish all labor that was required to erect, build, and complete a certain building in accordance with the drawings and specifications, which were made a part of the contract. The contract further stipulated that the contractors were to furnish "all materials, including the brick, lime, cement, lumber, sand, granite, windows, window frames, boards, iron plates and posts, and all parts required for the completion of the building."

The contractors completed all of the work and furnished all of the materials specified in the contract, except that they refused to furnish the labor and supply the materials required and necessary to construct a gravel roof which was clearly referred to in the specifications. The roof was not mentioned specifically in the contract.

The owner instituted legal proceedings against the contractor for a judgment to the amount of $800 which was the sum that he spent in providing the building with a roof after the contractors had withdrawn from the job. Although the contract did not refer to the roofing, it specified that the contractors were to finish the building in accordance with the drawings and specifications. The specifications provided that the entire roof of the building should be covered with a gravel roof and named the quality of materials to be used. The specifications, also, contained the provision "All of this roof material to be furnished by the contractor."

The owner claimed that the contractors were bound to perform all of the work and in addition furnish all of the materials required to construct the roof, as was stipulated in the specifications. The contractors stated, however, that they were not required to perform any of the labor or furnish any of the

materials required for the construction of a gravel roof. The Court held that the contractors were liable and ordered them to repay the owner the $800 which was spent in completing the building, for the simple reason that the contract clearly specified that the contractors were to furnish all of the materials required to construct the building. If the contract had not contained the conclusive statement and clause in which the contractors bound themselves to furnish all of the materials they would not have been able, even though the same provision was contained in the specifications.

Generally, the obvious purpose of the specifications is to point out to the several contractors the details of their particular agreement to furnish material and labor, or material or labor as well as the kind and quality to be used, and the method and manner of performing the several kinds of work, which may be accomplished by the contractors, in completing a building. Therefore, each contract which exists between the owner and the several contractors should specifically and unmistakenly point out the respective duties of the various contractors.

If Plans Are Referred To

On the other hand, where a building contract refers to the plans and specifications and conclusively makes them a part of the contract, the plans, specifications and the contract are construed in relation to the terms and meaning that was intended.

For instance, the Courts have held that where the specifications are attached to the contract, at the time they are signed by the parties thereto, all past and prior verbal agreements are null and void. Moreover, since the contract is written, verbal agreements which are usually entered into later are not binding on either party for the reason that when a written contract exists and other agreements relating to the details of the construction are entered into, these separate agreements should be reduced to writing, signed by the respective parties and attached to the original contract in the form of amendments.

There is another important phase of the legal relation of contracts and specifications. For example, a Court recently held that where the plans and specifications are plainly made a part of the contract, by the written matter in the contract itself, the terms of the plans and specifications were incorporated into a single contract, as if the terms in dispute were in the contract itself. If, however, the plans and specifications are referred to in the contract for a special purpose only, it is a well established rule that such specifications cannot be considered a part of the contract, other than for the one specified purpose. But if a contract is not written in a clear and understandable manner the specifications may be referred to in an effort to ascertain the exact meaning of the ambiguous contract.

Conflict Between Plans and Contract

Sometimes there is a conflict between the provision of the contract and the requirements of the plans and specifications, as a result of which one set of papers may directly contradict the other. Where this condition occurs the Courts have held that the contract shall be referred to to determine the intention of the parties, and its provisions shall prevail at all times.

Occasionally it is very difficult for a Court to determine the exact meaning of a provision which is in the contract, irrespective as to whether or not the particular subject matter is referred to in the plans and specifications.

An example of this situation is supplied by the records of a recent litigation which involved the meaning of the term "Work to be done according to plans and specifications in a good, workmanlike, and substantial manner, to the satisfaction of the owner" The contract further specified that the work was to be performed under the direction of an architect who was named in the contract. However, soon after the contractor began the work the owner discharged the architect and did not employ another, but superintended the construction work himself.

Workmanship Unsatisfactory

The owner refused to pay the contractor for the work done, on the grounds that the workmanship was not satisfactory and that it had not been done in accordance with the plans and specifications. The Court said that if there has been no willful departure from a building contract, and the contractor has honestly performed the contract in all its substantial particulars, he will not be required to forfeit his right to recover payment for the work thus done because of technicalities or unimportant omissions in the performance and accomplishment of the work. The owner was held liable to pay the full agreed price to the contractor.

In another case where the same point was involved the Court said that where a contract exists between an owner and a contractor to the effect that the completed work must prove satisfactory to the owner the only question to be determined is whether the work ought to satisfy a reasonable and prudent owner and if so the owner must pay.

In other words, where a building or other construction contract provides that the work shall be completed to the satisfaction of the owner, the contractor is legally bound and required to construct the work in good faith and of good materials in accordance with the plans and specifications, and if he does so the owner cannot avoid payment simply by claiming he is not satisfied. Therefore, it is apparent that the inclusion of this clause in a contract actually means that reasonably good materials shall be installed in a good workmanship manner.

Law Is Fair

The present established law is based upon numerous litigations which have occurred in the past and the decisions rendered by the Courts may be expected to be intended to mete out justice to all parties so that the persons who are engaged in a controversy may have their disputes settled in a manner which tends to be fair and just.

Where a contract is signed and by its legal construction the contractor is likely to be unjustly deprived of payment for his work the Courts are inclined to hesitate before deciding the case, even under these circumstances, to his complete disfavor, especially if it can be proved to the satisfaction of the Court that the contractor has shown good faith and actually has performed the work in a reasonably satisfactory manner.

Yet it is possible for persons to enter into contracts whereby they may be deprived of compensation, if such persons deliberately and willfully sign a contract while sane, in which work is agreed to be performed for little compensation.

So, therefore, it is advisable for all persons to carefully inspect and read a contract before affixing the signatures thereto.

Red Seal Progress

© S.E.D.

FIGURES on the spread of the Red Seal Plan during 1926, just released by the Society for Electrical Development, show that the Red Seal is fast becoming an integral part of the home building program of the country. From a total of 339 applications and awards during 1925, the 1926 total has jumped to 2,681 applications and awards, divided into 1,225 applications and 1,456 awards.

There are now 72 organizations (this includes 25 district organizations in California) licensed to operate the Red Seal Plan in 886 communities with an approximate population of 16,000,000, and 1927 is expected to see a continued movement of important centers of population to enroll under the sign of the Red Seal and take advantage of its benefits.

Those who are closest to the Plan hesitate to make predictions regarding its spread, simply because of its unlimited possibilities. However, up to this point, growth of the Red Seal in the United States has approximately paralleled that in Toronto, the birthplace of the Plan. In the latter city the final figures by years have been: 1923—41 homes; 1924—258 homes; 1925—854 homes; 1926—1,650 homes. If this rate of increase were to hold good for the United States, there would be 11,000 Red Seal homes in this country by the end of 1927, and 22,000 by the end of 1928.

However there is another factor in these calculations. The Toronto increase took place without any spread of territory from that first covered by the Plan, whereas the United States field is still only partially covered by leagues operating the Plan, and the figures above could very easily be doubled or tripled if this territory were to be organized. From present indications, much of it will be operating under Red Seal licenses before the end of 1927.

Studies are now being made to determine reasonable quotas for 1927 for the various leagues and these will be announced shortly.

From California, Denver and Chicago comes word that the use of Red Seal alternate proposal forms is bringing in many Red Seal contracts. The form, which has been used in California for some time, has recently been adopted in Denver and Chicago.

North Shore League

The newest organization to apply for a Red Seal license is the North Shore Electric League, which will operate in the territory along the lake front north of Chicago.

In the Field With Red Seal

Detroit: In Detroit the electrical contractor has become the most important promoter of Red Seal. Out of sixteen Red Seal jobs obtained recently the contractors have signed up eleven.

San Francisco: The Red Seal is proving the contractor's greatest asset in selling adequate jobs to the speculative builder. Out of twenty-five such builders, interviewed by representatives of the California Electrical Bureau, fourteen have Red Seal homes under way on their developments and six have pledged that all their homes will be Red Seal.

Pittsburgh: The first Red Seal apartment job in Pittsburgh is now going in and though it counts as only one Red Seal installation, it will afford adequate electrical installations to twenty-four families.

Grand Rapids: A Red Seal model electric home is being planned which will be available to the contractors as a Red Seal object lesson for their prospects.

Vancouver: The Electric Service League of Vancouver has been licensed to operate the Red Seal, this making the third league in Canada to get behind the idea of adequate installations.

Chicago Starts One-Column Ad Series

RECENTLY the Electric Association of Chicago began the publication of the series of Red Seal advertisements shown at the right. There are six of them, each of one column size, and they are to run periodically over a space of several months in all the Chicago papers. It was felt that greater results for the same amount of money could be obtained by small-space continuous advertising than by a few large-space advertisements followed by a silence equally as large. The series winds up by directing the public to a contractor for Red Seal information.

The Electragist

Official Journal of the
Association of Electragists—International

S. B. WILLIAMS
Editor

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Associate Editor

Wiring Prices

The electragists have been criticized for opposing those who have been demanding that the price of wiring be lowered. It seems that there has been a general misunderstanding all around. The electragists have not been opposing lower prices for wiring, they have been opposing what they thought was a policy of forcing down wiring prices by lowering standards—*i. e.* by cheapening wiring.

That, it would seem, was a mistaken idea, for the central station people thought to have held that view are now insisting that they have no desire to "cheapen" wiring. They suggest that the lower prices will be easily possible through the Ford plan of greater production.

The other side has also mistaken the position of the electragists. Never have the electragists come out in favor of gold-plated wiring. The electragists recognize that the public is best served when it secures its wiring at the lowest price consistent with good work.

Since it is apparent that both sides are looking at wiring prices from the standpoint of "best for the customer," it should be evident that there can be little difference of opinion.

The central stations have advanced the "quantity production" plan for lowering prices. That plan has worked amongst manufacturers and may work with electrical contractors.

It is our feeling, however, that greater benefits will come from greater attention to labor management, new tools, engineering studies of wiring layouts, better purchasing methods, elimination of lost time and non-productive labor.

The price of wiring is made up of materials, labor, overhead cost, profit. The contractor has no control over materials cost, nor over labor's wages. He can, however, better control the amount of labor. Overhead will, of course, be affected by volume of work, but only to a limited degree. The profit is now so small that we do not believe that anyone will ask that it be cut.

Our problem is not to find wiring supplies that are less expensive, for every time we lower price we lower quality, and the American standard of living is not one of cheapness.

Our problem rather is to find the most efficient ways of wiring buildings. The electragists are alert to this side of the matter.

At last we are all together. By uniting our efforts and bending our energies to increase the amount of wiring per building we shall increase our volume and be in a position to enjoy the fruits of "quantity production." With this encouragement the electragists will work harder than ever to find more economical wiring practises.

The Proposed Code Changes

A booklet of over eighty pages gives the proposed changes in the National Electrical Code which are to be acted upon at the annual meeting this month of the Electrical Committee. These changes represent an amount of effort and time which the industry will never fully appreciate.

This is the first time that the several article committees have had the aid and suggestions of the electrical field secretary, and for that reason it is the first time that the suggestions for changes have really represented the viewpoint of the inspection departments of the entire country. This is in line with the efforts being made to make the Code truly a "national" Code in every sense that the word conveys.

Some of the proposed changes are drastic and are of much greater significance than is apparent on the surface. The changes, however, are so voluminous that it hardly seems possible that the Electrical Committee can, in the time allotted, give adequate consideration to all proposals. In fact, there are certain changes which the committee undoubtedly will be asked to hold in abeyance pending further investigation and the accumulation of data and experience.

There is one change, however, to which exception is taken, namely the new definition of the word "approved" which it is proposed shall read "Acceptable to the authority enforcing this Code."

With all due respect to the chief electrical inspectors of this country, for whom as a body we have the greatest admiration, we are opposed to putting any such power in their hands. It means lack of national uniformity, it takes away from Underwriters' Laboratories much of the prestige necessary to maintain label service, it permits unscrupulous manufacturers to gain a foothold—it serves to denationalize the Code.

All Together

Each month the central stations and the appliance manufacturers center attention on a single item. Those for the Spring of 1927 are waffle irons for February, toasters for March, and percolators for April.

Why isn't it a good thing for contractor-dealers to coordinate their merchandising activities with this N. E. L. A. plan? With everybody pulling in the same direction the result ought to be beneficial to all.

All together now!

Heaven

Every now and then a local group of the better contractors having stood for everything imaginable from irresponsible competitors decide to clean things up with a bit of legislation. Sometimes when we read proposed bills we feel that it is not a bill to be passed by some legislature or city council, but rather a description of the electrical contractor's Heaven.

Everyone realizes the ills that such bills are aimed at. Everybody in the electrical industry who has the service of the public at heart recognizes the desirability of eradicating the undesirable and irresponsible contractor.

Contractors, however, must remember that competitors have as citizens rights that no State law or local ordinance can blot out. It is illegal to make a license fee so high that only the rich can afford it—it is against public economy to enact legislation for the purpose of reducing competition. If the public were to be told that such legislation were for that purpose the cry of high prices would go up.

No one by means of restrictive rules can take from another the means of doing business or prevent one from engaging in a business unless those rules cover moral, fire, or safety Codes only. A man has a right to set up his office any where and in whatever way he wishes.

Restraint of trade does not build business or public confidence. Contractors who face unethical and unfair competition must build public confidence in their good work. That is the only permanent and successful method.

State legislation is never successful as a preventative, it costs money, and is at the best but a compromise.

Nema Radio Hour

Dealers have felt greatly handicapped in making sales of sets because the broadcasting programs during business hours have not been of a high order. The radio manufacturers who belong to the National Electrical Manufacturers Association (Nema) have decided to try to correct this in some measure by arranging with the National Broadcasting Company for an hour's program each day. The program will be of the highest quality.

However, before going ahead the manufacturers want to know what is the best hour in the day to broadcast this program so that maximum sales benefits may be secured. They want to hear from the dealers.

Write your jobber, your manufacturer or write us and say what you think the best hour will be. There are no obligations to this.

Wanted:—Code Interpretations

The administration of the National Electrical Code today is not uniform—not because inspection departments wish to depart from the Code, but because there is a wide variation of opinion as to the meaning of the Code.

It is true that that condition is in certain instances a reflection on the Code—instances where there is a definite conflict between sections, or instances where the wording is not clear. Those instances are less numerous than they were and most of them will in all probability be cleaned up at the next annual meeting of the Electrical Committee which occurs this month.

Where there are hundreds of inspection department heads, some Underwriters' and some municipal, only a few of whom have had any part in Electrical Committee thinking, it must be expected that there will be differences of opinion. It can be stated as a fairly general rule also that these are honest differences of opinions.

So far a chief inspector has had to rely on his own interpretation. There has been no central body to which he could put a bothersome question. He has made his rulings according to his own best judgment which even he was not always sure was right.

When a difference of opinion has arisen between an inspection department and a contractor the department's ruling has been final. These rulings cost the department nothing, but not so the contractor. If he has put in a piece of work, as he thinks, according to the Code, and it does not coincide with the department's interpretation, the chances are that the contractor has to rip the work out, and do it over.

Of course, inspection departments as a rule are just and reasonable, but there are times when a department and a contractor lock horns over a ruling. Inspectors are not infallible.

A Code interpretative body is a necessity. No one individual can do the work unaided—nor would it be fair to put such a responsibility on any one person.

This body should consider questions sent to it by any interested party, be it inspector, contractor, central station or manufacturer. One of its principal jobs will be to render decisions on points in dispute.

If it be a good thing to have uniform ordinances based on the National Electrical Code, will it not be a good thing to have uniformity of administration of that Code?

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Baltimore (C)	W. D. Young	Calvert & Franklin Sts.
MASSACHUSETTS		
Lowell (C)	George A. Ryan	79 Middle St.
Haverhill (C)	H. W. Porter	14 West St.
Malden (Medford, Everett and Melrose) (C)	H. J. Walton	c|o Malden Electric Co.
Springfield (C)	A. R. Tullock	11-12 Court House Place
Worcester (L)	John W. Coghlin	259 Main St.
MICHIGAN		
Detroit (C)	N. J. Biddle	112 Madison Ave.
Grand Rapids (C)	T. J. Haven	1118 Wealthy St., S. E.
Kalamazoo	E. R. Hummel	1121 Seminary St.
Saginaw (C)	E. T. Eastman	209 Brewers Arcade
MINNESOTA		
Duluth (L)	Morris Braden	c-o Minn. Pow'r & Lt. Co.
Minneapolis (C)	W. I. Gray	209 Globe Building
MISSOURI		
Kansas City (C)	A. S. Morgan	4 E. Forty-third St.
St. Louis Electragists' Ass'n (C)	W. F. Gerstner	120 No. Second St.
Electric Employers' Association (C)	G. L. Gamp	Wainwright Bldg.
NEBRASKA		
Lincoln (L)	George Ludden	1329 N Street
Omaha (C)	E. H. Brown	1818½ Harney Street
NEW JERSEY		
Long Branch (C (Asbury Park and Red Bank)	Austin Hurley	Campbell Ave., Long Branch
Newark (C)	Paul H. Jaehnig	435 Orange Street
Paterson (C)	R. Marshall	106 Academy St.
Philipsburg (See Lehigh Valley, Pa.)		
NEW YORK		
Buffalo (L)	W. E. Prosser	87 W. Tupper St.
Brooklyn (C)	H. F. Walcott	60 Third Avenue
Jamestown (C)	Henry M. Lund	309 Main Street
Nassau-Suffolk (C)	Henry T. Hobby	55 Front Street, Rockville Centre, L. I.
New York City Section No. 1 (C)	M. J. Levy	70 East 45th Street
Independent (C)	Albert A. A. Tuna	127 East 34th Street
Metropolitan (C)	George W. Neil	96 Beekman St.
Niagara Falls (C)	E. M. King	515 Niagara Street
Rochester (C)	Theo. T. Benz	278 State Street
Schenectady (C)	Richard Spengler	421 McClellan Street
Syracuse (C)	Fred P. Edinger	802 East Water St.
Utica (C)	W. C. Ballda	228 Genesee Street
Westchester Co. (C)	Jack Lalley	14 Mnr. Hse.Sq.,Yonkers
Yonkers (C)	Louis Mayer	485 South Broadway
OHIO		
Akron (C)	E. C. Rishel	540 East Avenue
Canton (C)	H. S. Hastings	301 New Vickery Bldg.
Cincinnati (C)	J. F. Riehle	1642 Cedar Ave.
Cleveland (C)	F. T. Manahan	Chester Twelfth Bldg.
Columbus (L)	O. A. Robins	1242 Oak Street
Toledo (C)	Fred C. Dunn	Builders' Exchange
Dayton (C)	Clarence Carey	1107 South Brown St.
Marion (C)	O. H. Cornwell	461 W. Center Street
Massilon (C)	F. D. Mossop	c-o Mesco Electric Co.
Northern Ohio (C)	R. A. Wentz	Elyria
OKLAHOMA		
Pawhuska	C. G. Sego	Pawhuska
OREGON		
Portland (C)	J. R. Tomlinson	51 Union Ave. N.
PENNSYLVANIA		
Altoona (C)	Walter Bracken	Leechburg
Allegheny Valley	E. G. Jackson	12 West Third Street
Chester (C)	W. H. McMillan	12 E. Long Avenue
Du Bois (C)	C. E. Blakeslee	11th and French Sts.
Erie (C)	R. D. Goff	1605 N. Third Street
Harrisburg (C)	W. W. Weaver	Main and Market Sts.
Lehigh Valley (C)	A. W. Hill	Bethlehem
Philadelphia (C)	M. G. Sellers	1202 Locust Street
Pittsburgh (C)	Fred Rebele	1404 Commonwealth Bldg.
Wilkes-Barre (L)	Ambrose Saricks	25 No. Main Street
RHODE ISLAND		
Providence (C)	H. E. Batman	36 Exchange Place
SOUTH CAROLINA		
Charleston (L)	J. P. Connolly	141 Meeting Street
SOUTH DAKOTA		
Sioux Falls	H. W. Claus	326 S. Phillips Ave.
TENNESSEE		
Chattanooga (L)	P. W. Curtis	725 Walnut Street
Knoxville (L)	Jerry G. Cason	303 West Church St.
Memphis (L)	J. J. Brennan	12-16 So. Second St.
Nashville (C)	J. T. Shannon	c-o Electric Equip. Co.
TEXAS		
Beaumont (C)	J. A. Solleder	Houston & Bolivar Sts.
Dallas (C)	P. B. Seastrunk	2032 Commerce St.
Houston (C)	J. W. Read	715 Capitol Avenue
UTAH		
Ogden	B. Kristofferson	2249 Washington Ave.
Salt Lake City (C)	C. Louis Collins	215 Kearns Bldg.
VIRGINIA		
Lynchburg (C)	J. L. Fennell	c-o Fennell & App
Norfolk (L)	A. W. Cornick	200 Plum St.
Richmond (C)	E. M. Andrews	15 N. Twelfth Street
WASHINGTON		
Seattle (L)	P. L. Hoadley	Seaboard Building
Spokane (C)	William Stack	W. 1121 Cleveland St.
WEST VIRGINIA		
Wheeling	Peter J. Erb	1414 Eoff St.
WISCONSIN		
Green Bay (C)	V. E. Grebel	531 S. Broadway
Madison (C)	L. A. Ring	2017 Winnebago St.
Milwaukee (C)	E. H. Herzberg	1604 Wells Street
Racine (C)	Joseph J. Small	1910 Linden Ave.
CANADA		
Montreal (C)	George C. L. Brassart	674 Girouard Ave.
Toronto (C)	M. McRay	24 Adelaide St., N. E.
Vancouver (C)	J. C. Reston	579 Howe St.
Winnipeg (C)	Fred Ball	300 Princess St.

(C) designates exclusively Contractor-Dealer organization.
(L) designates an Electrical League.

JANUARY ACTIVITIES

W. L. Goodwin Resigns From S. E. D.

The board of directors of the Society for Electrical Development has announced the resignation of William L. Goodwin, who for eight years has been operating vice president in charge of the society. In accepting this resignation the board adopted a resolution paying tribute to the fundamental contributions Mr. Goodwin has made to the development of the electrical industry.

Fundamental Contributions

"With rare clarity of vision," it says, "and the most courageous idealism, supported by untiring industry and an energy that is indefatigable he has pioneered in the thinking of the industry toward a closer and more purposeful coordination among electrical men for market development. This leadership has had conspicuous expression in the inauguration of the annual conferences of electrical leagues held at Association Island through which the society has been for five years the national headquarters for league development and service and has assisted in the rapid growth of the local league movement; in the establishment of the Red Seal Plan on a national basis as an approach to the great market for more adequate wiring in the home, and in the conception of the 'market development plan,' now in process of refinement, to bring about a coordination of the commodity campaigns of manufacturers and their proper relations to the leagues. His enthusiastic and self-sacrificing work for the society has endeared him to us all and we wish him God-speed in his future activities."

Mr. Goodwin's resignation takes effect April 1, with leave of absence from January 1. He has not yet announced his plans. No successor to Mr. Goodwin has yet been announced.

N. F. P. A. Meeting Shifted to Chicago

The annual meeting of the National Fire Protection Association which has been scheduled to be held in Memphis during May has been shifted to Chicago, according to the announcement from the association headquarters, and will take place at the Congress Hotel in that city on May 9, 10, 11 and 12.

Injunction Asked Against Cut-Price Lamp Renewals

The practice of a central station renewing its customers' lamps at a cost plus handling charge is attacked in the pleading for an injunction which has been filed against the Hartford (Conn.) Electric Light Company by Harry Bishoff, a contractor-dealer of that city.

It is charged in the complaint that the system "is not in fact one of free renewals or free exchanges." The allegation is made that "all of said bulbs and lamps distributed under the system are in fact paid for by all of the consumers who purchase electric current from the defendant, in that the cost of said bulbs and lamps are charged on to the general expenses of the defendant and are paid for out of the revenue derived from the sale of current."

Monopoly Charged

According to the complaint, the lamp exchange and renewal service is used by the company only to give new bulbs to the consumers in place of old ones which may be damaged or burned out in use. Then follows an explanation of the rules governing the renewals or exchanges, "all bulbs of fifty watts or more being exchanged without charge to consumers, except as later described, and bulbs of less than fifty watts being exchanged without charge for one of fifty watts or more, and upon the payment of the sum of twenty cents for each bulb exchanged said bulbs of less than fifty watts are exchanged for bulbs of similar size or smaller, said service being limited to 'Mazda' lamps."

In this connection it is argued that the company "has secured a virtual monopoly in the distribution of 'Mazda' lamps and bulbs in the town of Hartford and vicinity."

The system is classed as "an unfair and inequitable business practice." Further, it is maintained that the "monopoly has deprived the plaintiff and all other electrical appliance vendors in Hartford and vicinity from having the opportunity of competing on a fair and equal basis with the defendant in the use of such electrical lamps and bulbs."

Supplementing this charge is a contention that the inability of the plaintiff to compete with the company in the distribution of lamps and bulbs has resulted in a loss of business, it being well known that persons who enter an electrical appliance store for the purpose of buying bulbs are prospective buyers for other electrical appliances."

Commissions to Dealers

In reference to an alleged contract between the company and some electrical appliance dealers and contractors, calling for the payment of commissions on the sales of electrical appliances, the complaint avers that "said allowances and commissions are discriminatory and constitute an unlawful and invalid use of the funds of the defendant as a public service corporation, in that they constitute a subsidy, and the said advertising allowances so-called constitute unlawful rebates and are therefore discriminatory."

In a statement given to the newspapers the central station declared that its customers saved $68,000 during the year ended November 30 by this policy, since the total cost of the lamps renewed during that time would have been $216,000 at list prices, whereas their total cost to customers was actually only $148,000.

Regulations for Municipal Fire Alarm Systems

A pamphlet embodying the 1926 regulations for the installation, maintenance and use of municipal fire alarm systems has been published by the National Board of Fire Underwriters. These regulations are a revision of the edition of 1922, extensively changed by the National Fire Protection Association at the 1925 and 1926 annual meetings. In addition, the regulations have been approved by the International Association of Municipal Electricians.

Ninety-five Percent of New York's Electrical Fires Due to Improper Maintenance

Figures Released by N. Y. Board of Fire Underwriters Show That Nearly All These Losses Are Chargeable to Poor Maintenance of Apparatus or Unapproved Extensions and Alterations

THE 1926 fire loss in New York City, attributable to known electrical causes, according to the annual statistics gathered by the New York Board of Fire Underwriters, was $267,521, with the further illuminating announcement that of this loss only $15,113, or approximately 5 percent, was caused by equipment which had been inspected and passed as in satisfactory condition. J. C. Forsyth, supervising engineer of the bureau of electricity of the board, pointed out also that the loss from fires known to have been caused by electricity was actually only a small part of the total undoubtedly due to this cause.

In gathering the figures the board includes only those fires which are proved beyond doubt to have been of electrical origin. Each year the fire loss from unknown causes is very high, in 1925 this figure having reached approximately $25,000,000. Of these losses of unknown origin, each general cause must assume responsibility for its proportionate share, so that fires of electrical origin in 1926 will probably be credited with well over $2,000,000 worth of damage in New York City in 1926.

The table given below shows in detail the number of fires caused by various electrical mishaps and also the total amount of damage from each separate cause. It will be noted that, as usual, pressing irons left in circuit are accountable for the greatest amount of damage, while defective splices and short circuits and grounds in flexible cord rank second and third, respectively.

During the year the electrical bureau made a total of 405,168 inspections, an increase of 100,000 over the previous year. This unusual jump is accounted for by the fact that not until October, 1925, was the territory of the board enlarged to include, as well as the city of Greater New York, all the counties of Putnam, Rockland, Westchester, Nassau, Queens and Suffolk.

Particularly interesting are the figures on reinspection which are as follows:

Buildings completely inspected	4,248
Equipments completely inspected	11,529
Equipments found defective	6,588
Equipments found satisfactory	4,941
Equipments where defects were corrected	5,579
Buildings bulletined as defective	1,146
Buildings bulletined as corrected	848

New Field Representatives for A. E. I.

The appointment of several new field representatives for the Association of Electragists, International, has been announced by J. Hill, field director of the A. E. I. The new field men include William P. O'Brien, Ernest N. Williams, D. N. Fleming and Wm. J. Tighe. Further appointments are to be made until the field force is raised to nine.

This announcement is in line with the A. E. I. policy of serving the field more intensively than previously and upon completion of a short but thorough training course the field men will be assigned to territories which will enable them to keep in constant touch with the membership.

Peterson to Manage Baltimore Association

Arthur P. Peterson, field representative of the Association of Electragists, International, for a number of years, has announced his resignation, effective February 1. Mr. Peterson, who has become known widely to contractor-dealers all over the country as the result of his work in the field, will assume the managership of the Baltimore Association of Electragists.

Electrical Fires in Greater New York

EIGHT hundred and forty-three fires of reported electrical origin were called to the attention of the underwriters during the year. It was found upon investigation that five hundred and forty-five of these were attributable to electricity and caused an aggregate loss of $267,521.74. These fires may be classified as follows:

CAUSES	FIRES	LOSSES
Contacts defective	14	$ 1,120.00
Current entering building over metal conduit, etc., to interior ground connection	9	1,000.00
Fuse, operation igniting adjacent inflammable material	4	
Fuse operation (neutral of 3-wire branch circuit	1	
Flexible cord. short circuits and grounds	39	2,750.00
Grounding of conductors in conduit or in contact with other metal work	27	2,305.00
Grounds, due to moisture	14	310.00
Heaters, warmers or pads, left in circuit	12	875.00
Lamps, incandescent, ignition of inflammable material	11	1,035.00
Motion picture film, (miniature type machine not in booth)	2	550.00
Motion picture film, ignition at machine in booths	6	300.00
Motors, sparks from	20	3,080.00
Motor and generator windings	40	2,862.00
Pressing irons left in circuit (91 in 1922), (68 in 1923), (126 in 1924), (136 in 1925)	121	56,402.12
Radio receiving equipment, lightning	5	155.00
Radio receiving equipment, short circuit	6	1,226.00
Services: of illuminating company	4	335.00
Short circuits, accidental	23	3,705.00
Short circuits in elevator cables	8	826.00
Short circuits in sockets	12	2,340.00
Splices defective	75	10,295.00
Transformer insulation breakdowns in vaults	17	
Volatile liquid or fumes	24	10,155.00
Storage cell short circuit during charge	2	510.00
Electric curling irons	1	100.00
Bell ringer short circuits	2	50.00
Christmas tree wiring short circuits	5	8,700.00
Electrically operated toy trains short circuits	3	2,200.00
110 volt current used on unapproved burglar alarm system	3	70.00
Disturbance in high potential apparatus in power house	3	4,500.00
Disturbance in interior wiring caused apparently by lightning discharge	31	260.00
Short circuit in No. 14 Duplex conductor used on portable lamp	1	149,505.62
		$267,521.74

Decision Promised on N. Y. Motor Resale Plan

A decision on the value of the motor resale agreement plan, proposed by the electrical contractor group of the New York Electrical Board of Trade, was expected to be reached when the Board of Governors of that body convened for the monthly meeting scheduled for January 29. The outcome of this meeting was not available in time for publication in the current issue, but at the time of going to press it was known that competent opinion had been obtained on the legality of the resale agreement plan.

The contractor group had presented the plan to a previous meeting of the board of governors, but it was deemed best that no action be taken on it until an attorney had passed on its legality. If this opinion is affirmative the plan will be presented by the board of governors to the various motor manufacturers for their consideration.

The most important provisions of the plan would make it impossible for contractor-dealers to hold motor sales agreements on competing lines of motors, except under special conditions, would set discounts at 15 percent for dealers holding motor sales agreements and 10 percent for those not holding such agreements, would have manufacturers sell customers direct only at list prices except in the case of manufacturers who buy motors for resale with their own apparatus, public utilities and the Federal government, and would allocate a compensation of 5 percent to the contractor-dealer who installs the wiring for motor apparatus which has been sold direct to the customer.

Boston Contractors Elect Hixon President

Alfred J. Hixon of the Hixon Electrical Company, Boston, was elected president of the Boston Electrical Contractors' Association at the annual meeting held on January 7. Other officers chosen were: George Quimby, vice president; Charles J. Rounds, secretary-treasurer, and James Stafford, James Smith, Harry Cole and Joseph Stanton, executive committeemen.

Lighting Fixture Exhibit and Conventions Get Under Way

Probably the most important series of events that have occurred in the history of the lighting fixture industry are now taking place in Cleveland, Ohio, with the opening of the Lighting Fixture Exhibit, under the auspices of the Artistic Lighting Equipment Association. The exhibit opens January 31 and runs to February 4.

An evidence of the hearty spirit of cooperation prevailing among the several branches of the lighting fixture industry is the fact that four of the national associations in this field are holding their annual conventions in Cleveland on these same dates. The associations are the Artistic Lighting Equipment Association, the Illuminating Glassware Guild, the National Association of Lighting Equipment Dealers and the Associated Lighting Equipment Salesmen. In addition, the A. C. E. Section of the Association of Electragists is also meeting in Cleveland at this time. The exhibition and conventions will be covered in the March issue.

A Night Scene of the Famous St. Louis Municipal Opera, One of the Attractions at the 1927 A. E. I. Convention

ONE of the entertainment features of the 1927 convention of the Association of Electragists, International, at St. Louis during August, is to be a night at the Municipal Opera, which has won world-wide fame. As shown in the photograph above the opera is given in an immense open-air amphitheatre, seating five thousand persons. In the background, grouped around the stage, may be seen the sweeping elms and oaks which provide an inspiring setting for all the performances. The offerings at the theatre are as a rule light opera, of the Gilbert & Sullivan type, and the cast always includes singers of international renown. A block of the best seats in the theatre is to be reserved for the convention delegates and visitors on the night of August 10, the production to be announced later.

Northwest Inspectors Urge Electrical Committee Action to Obviate Special Ruling Needs

Convention Resolution Asks That National Electrical Code Be Amplified on Certain Subjects Where It Has Been Found Necessary to Make Special Local Rulings

THE outstanding feature of the annual convention of the Northwest Association of Electrical Inspectors, held at Portland, Ore., on January 18 and 19, was the passage of two resolutions, one asking certain amplifications of the National Electrical Code and the second calling attention to the need for municipal ordinances prohibiting the sale of unsafe devices and materials.

The first resolution was prepared from the following report of the Northwest Inspectors' Association:

"At a joint meeting of your committee and the Executive Committee of the California Association of Electrical Inspectors held January 17 W. J. Canada, electrical field secretary of the N. F. P. A., outlined briefly the work of the Electrical Committee in connection with the proposed changes in the Code and also the advantages to be obtained by municipalities operating under a Uniform Electrical Ordinance, based on such a Code.

"It was the consensus of opinion of those present (and the thought has been expressed often in sessions of our conventions) that heretofore the Code has been inadequate for the needs of its administrators and it has been found necessary by the administrators to enact additional requirements to amplify the Code to meet existing conditions.

"Among the particular subjects, with respect to which it has been found necessary to formulate the special rules, are, briefly, the following:

1. The places where conduit or other specific approved types of wiring shall be employed to safeguard life and property.
2. The determination of number of circuits per unit area, required to meet the demands for reasonable intensity of illumination and capacity of appliances, in order to avoid future overloading of such circuits and subsequent unsafe fusing.
3. The determination of sizes of mains and feeders with proper consideration to the diversity of connected loads.
4. The formulation of adequate motor wiring tables and protective methods required in industrial and other power installations.

"These subjects, in addition to many others now being under consideration by the Electrical Committee, the Executive Committees of the Northwest and California Associations, meeting jointly, believing that proper action on these matters will obviate the necessity of making special rules, this Joint Committee does recommend the adoption of the following resolution:

"Whereas, realizing the present inadequacy of the National Electrical Code and the importance of having standards of construction which will render unnecessary special rules by local inspection departments and the many objectionable features incident thereto,

Now, therefore, Be It Resolved that the Northwest Association of Electrical Inspectors forward to the N. F. P. A. and to the Electrical Committee for their attention a copy of the report of the Joint Executive Committees of the Northwest and California Associations, as expressing our hope for constructive action on the matters under consideration, and

Be It Further Resolved that the Inspection Departments of the Pacific Coast do hereby tender our hearty cooperation and assure the Electrical Committee of our desire to assist them in their difficult and important work.

The resolution concerning the sale of unsafe electrical devices was substantially as follows:

"Resolution: In view of the lack of control without some such ordinance prohibiting the sale of unsafe devices and materials and their subsequent use and installation,

"Be It Resolved by this association that a uniform ordinance requirement along lines similar to those adopted in Portland to control such sales be prepared, indorsed and recommended to members of this association.

"That a committee be authorized and directed to prepare such a uniform ordinance requirement for early submission to this association.

"That this committee utilize all existing sources of information and cooperate with other committees engaged in the study of the subject."

Illinois Electrical Legislation Prepared For Submission

Hope for some relief from the chaos affecting the electrical contracting industry in Illinois is seen in the preparation by a committee representing all branches of the industry in that state of two bills to be presented soon to the current session of the Illinois State Legislature. As explained in previous issues, court decisions had voided inspection and licensing laws which formerly obtained in Illinois and municipalities have been left without any means of regulating installations of electrical equipment or those who did the work.

One of the new bills amends the "Cities and Villages" act to require registration of electrical contractors.

The second bill concerns the regulation of the installation, alteration and use of electrical equipment.

Though the drafting of the bills was finished in December, their submission to the legislature has been held up pending their endorsement by a number of important organizations in the State. Already, it is announced, they have received the approval of interests which were vigorously opposed to the last legislation which was later held unconstitutional. On February 9 they will be submitted to the Illinois Municipal League for indorsement and with the request that they be included in the legislative program of the league.

Milwaukee Contractors Elect New Officers

Officers elected for 1927 by the Electrical Contractor-Dealers' Association of Milwaukee are: George Andrae, chairman; F. H. Oppitz, vice chairman; R. Knoerr, secretary-treasurer; H. C. Adolphsen and George Magaw, members of the board of directors.

Wisconsin's Tenth Annual State Meeting

The Wisconsin State Association of Electrical Contractors and Dealers are holding their tenth annual convention at the Pfister Hotel, Milwaukee, on January 26, 27 and 28, as this issue goes to press. The tentative program of the meeting provides for addresses on the following subjects: "The Wisconsin State Code," "Inspection from a Contractor's Viewpoint, from a Manufacturer's Viewpoint and from the Inspector's Viewpoint," and "The Future of the State Association." An invitation to attend the meeting has been extended to all electrical inspectors, jobbers and manufacturers. A banquet is to be held the evening of January 27.

Annual Meeting of Western Section of Inspectors

The annual meeting of the Western Section of the International Association of Electrical Inspectors was held in Kansas City, Mo., on January 25, 26 and 27, at the Kansas City Athletic Club. Some of the subjects slated for discussion at the meeting were: "Some of the Pitfalls of Special Rules for Electrical Installations," by H. B. Kirkland; "Professional Ethics as Applied to Electrical Inspection," by Frank R. Daniel and "The Contact of the Electrical Manufacturer with Electrical Inspection."

N. E. M. A. Plans Extensive Broadcasting Program

Plans of the members of the radio division of the National Electrical Manufacturers Association, announced at the January 19 meeting of the association, call for the most extensive radio broadcasting program ever projected.

The following resolution, outlining this, was passed:

"Whereas there is an urgent need for daylight broadcasting of a high-grade program for the purpose of enabling radio dealers to demonstrate receiving sets during regular business hours; therefore be it resolved that the radio division of the National Electrical Manufacturers Association establish an NEMA hour for the aforesaid purpose."

"It has been evident to the radio manufacturers for some time," said L. B. Raycroft of the Electric Storage Battery Company, Philadelphia, who is vice president in charge of the radio division, "that the dealers in many cities and towns in the United States have been handicapped in making sales, due to the lack of appropriate broadcasting during business hours. This is not the case in a few cities, but this condition exists nationally.

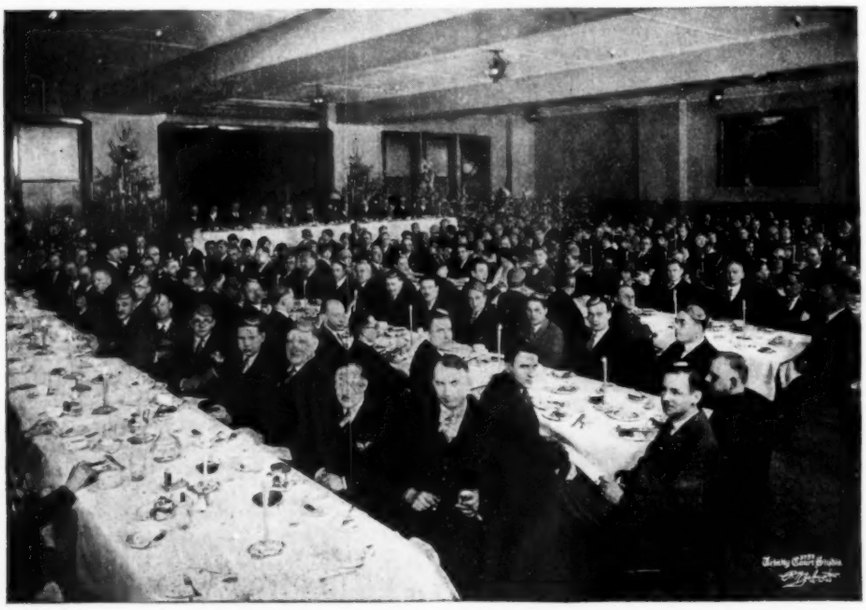
"Members of the radio division include practically all the leading radio manufacturers in the United States and supply about 85 percent of the radio apparatus sold in this country.

"According to the present plan it is proposed to broadcast for an hour on a nation-wide basis every week day, and we have secured an option on both the Red and Blue networks of the National Broadcasting Company. Inasmuch as no other 'hour' is placed on the air more frequently than once a week, and very few of the regular weekly hours are on a nation-wide basis, we believe that the NEMA hour will transcend any broadcasting program ever attempted," said Alfred E. Waller, managing director of the National Electrical Manufacturers Association.

Electrical Safety Conference Postponed to April

The meeting of the Electrical Safety Conference which had been scheduled for January 19 in New York has been postponed until April, according to the announcement of Robert B. Shepard, secretary. This action was taken in order that the meeting might not conflict with that of the National Electrical Manufacturers' Association, which was held in New York on January 19 and 20.

Pittsburgh League's Christmas Party



The Christmas Party of the Electric League of Pittsburgh, with a total attendance of over three hundred, was held on December 21. Souvenir stockings containing electrical novelties were the piece de resistance of the party

Bayonne Has $50 License Fee for Non-Residents

Under a revision of the electrical ordinance of the city of Bayonne, N. J., master electricians who are non-residents of that municipality may obtain licenses upon payment of $50, instead of $150 as stated in the January issue of THE ELECTRAGIST. This correction is made at the instance of Joseph E. Korchinsky, superintendent of the electrical bureau, department of public safety, Bayonne. The revision will go into effect in the next month. Penalties for violation of the ordinance are a $25 fine for the first offense, a $50 fine for the second offense and $100 for the third and subsequent offenses. The information contained in the article published in the January issue was obtained from the legal notice inserted in the local newspapers by the city clerk of Bayonne.

Philadelphia Association to Increase Membership

At the annual meeting of the Philadelphia Electrical Contractors' Association, held December 9, following a luncheon, the business session resulted in prolonged discussion of standardization, trade policy, registration and other important subjects, having special reference to the contracting branch of the electrical industry.

A campaign for increasing the membership was inaugurated January 1 under some contemplated changes in the constitution and by-laws.

The following officers were elected for the ensuing year: President, Louis W. Moxey, Jr.; vice president, Herman Mayer; secretary-treasurer, M. G. Sellers; Louis W. Moxey, Jr., Herman Mayer, W. V. Pangbone, J. F. Buchanan and Bruce B. Ross, members board of directors.

Southern California Convention in February

The next convention of the California Electragists, Southern Division, will probably be held during February at Lebec, according to tentative plans at the time of writing. A full report of the meeting will be printed later.

Other news from Southern California electragists is to the effect that the

Trade Policy Committee of the organization has compiled a meeting and attendance record worthy of recognition. In eighteen months the committee, composed of Harry Walker, Glen Arbogast, Tom Horton, Jack Farley and Frank McGinley, has held over sixty meetings and in that period there have been only three absentees.

Florida Association to Meet at Orlando

A meeting of the Florida Association of Electragists will be held at Orlando on February 15. The meeting will occupy the entire day with a business session in the morning and addresses in the afternoon by H. B. Kirkland on "The Uniform Electrical Ordinance," K. A. MacIntyre on "The Red Seal Plan" and Laurence W. Davis on "The Electragist's Outlook Today."

Specifications for Residence Lighting Equipment

A committee of the Association of Edison Illuminating Companies has prepared tentative specifications for guidance of central station members in selecting residence lighting equipment for sale to the public. This committee includes representatives of seven central station companies and has enjoyed the cooperation of a committee of the Illuminating Engineering Society.

A preface to the specifications reads: "The purpose of these specifications is to promote improvement in artificial lighting in residences through the employment of lighting equipment which will render good service by providing convenient and effective illumination with conservation of eyesight and enhanced decorative qualities."

The specifications offer a method of appraising luminaries with respect to: (a) illuminating qualities; (b) construction and (c) appearance.

Under the first head there is included a method of rating luminaries as to light output. Also there is a method devised by the Illuminating Engineering Society committee for gauging luminaries as to glare. No lighting equipment which is unsafe or unduly glaring can be approved under these specifications.

New York Independents Dine, Dance and Install Officers

THE installation of officers of the Independent Associated Electrical Contractors and Dealers of New York for 1927 took place at a dinner held at the Hotel Astor on January 12. The affair was attended by nearly four hundred members and guests, representing all branches of the industry, and the dinner was followed by dancing. The officers include S. J. O'Brien, who is serving his second term as president; H. M. Walter and Fred B. Zenker, vice presidents; Nathan Zolinsky, financial secretary; Albert A. A. Tuna, recording secretary, and M. J. Heller, sergeant-at-arms.

OBITUARIES

S. B. Frank

S. B. (Jack) Frank, special representative for the Mutual Electric and Machine Company, died at Cleveland on January 10, aged 48. Mr. Frank had been in the industry for a number of years and was a familiar figure to probably every electrical jobber east of the Rocky Mountains. He had, also, a wide acquaintance among electrical contractors, industrial engineers and architects

J. A. Pizzini

James A. Pizzini, assistant manager of the New York branch of the Graybar Electric Company, died during January at the age of 64. Mr. Pizzini was born in Richmond, Va., and had been with the company's branch house there before coming to New York. Prior to his appointment to the assistant managership of the New York house he had held the position of sales manager there.

New Electragists

The following contractor-dealers have made application and been accepted into the A. E. I. since the publication of the last list in the January issue:

CALIFORNIA

Orosi:
Orosi Elec. Works

ILLINOIS

Normal:
G. Franklin Hill

MICHIGAN

Albion:
G. C. Sebastian

Detroit:
Electrical Constr. Co.
Henry F. Hurley
Clark Loveridge
Thad E. McPhee
Ray B. Owen
Harry W. Sturmer
West Detroit Elec. Co.

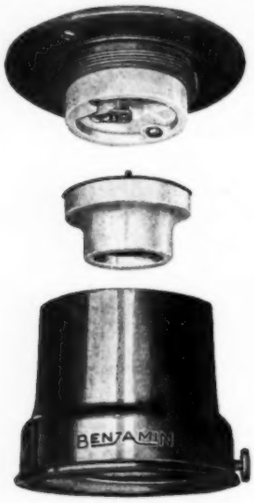
Grosse Pointe:
Maryland Elec. Co.

Highland Park:
W. G. Brown

News of the Manufacturers

Fixture Fittings

To permit the use of 100-W. Type A lamps in lighting equipment originally planned to take 100-W. Type C lamps the Benjamin Electric Manufacturing Company is now making a porcelain socket extension which lengthens the socket and is a part of it, rather than a screwed-in addition. This extension, No. 4649, fits between the upper and lower parts of Benjamin two-piece sockets, Nos. 86 and 88, without disturbing the wiring, and lowers the filament of the new smaller lamp to the right position for correct distribution of light. The extension will work equally well with any medium base lamp in using a reflector with



the next smaller size lamp than the one for which it was intended. This is an advantage where it is necessary to get a wide distribution of light with a small amount of current consumption.

Wiring the socket has been made easier in Benjamin Type RR Heavy Duty Lighting Equipment by the development of a separable feature in the cast iron hoods of that line. The "easy-to-wire" feature is accomplished with two-piece hoods in place of the former one-piece type, the body of the hood being attached to the cap by means of a fine screw thread. Removal of the body exposes the terminal base and gives easy access to the wiring terminals, in contrast to the terminals having heretofore been recessed by the body of the hood.

The new hoods are made in both pendent and outlet box types. They have the Type RR screw thread for attaching reflectors, the same as the former one-piece hoods, and are adaptable to the same socket equipment.

Kitchen Ventilator

A kitchen ventilator and equipment, built as a unit, is the latest addition to the products of the Ilg Electric Ventilating Company, Chicago. The unit comes complete with a wood cabinet having a paneled glass door, an automatic shutter, a jam switch and the necessary hardware. The outstanding feature is the glass door which when opened starts the ventilator by means of a jam switch. When closed it stops the motor. The door is said to insure elimination of cold drafts when the ventilator is not running and the automatic shutter protects the motor from rain.

Hand Starting Compensators

The General Electric Company has announced a hand starting compensator suitable for starting polyphase squirrel-cage induction motors, driving pumps, compressors, conveyors, blowers, etc. The compensators are so constructed that they can be readily inspected and furnish protection for both the operator and the motor. They are provided with a dead-front steel cabinet with only the operating handle, tripping knob and the enclosed hand reset overload relay on the outside. They are arranged for floor mounting. One type has a separately mounted auto transformer for 25-cycle ratings above 75 h. p.

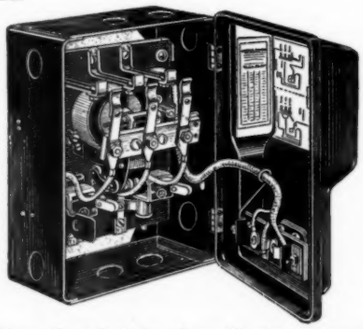
Bathroom Fixtures

The Perfeclite Company, Cleveland, is introducing an addition to its line of bathroom fixtures under the trade-name "Porc-o-Lite." The features claimed for the new fixtures are that no screws are necessary for securing the shade and that they are equipped with a patented novel locking ring, enabling shade angle adjustments on the brackets. The holders are made of porcelain, in white finish. Other finishes may be secured on special orders.

The company has also begun production of three new designs of its "Onli" safety screwless holders, in plain and ornamental types.

Starting Switches

The Allen-Bradley Company, Milwaukee, has recently added the Type J-1552 Form B switch to its standard line of across-the-line starting switches. The Form B size extends the advantages of push-button control, thermal overhead relays, and no-voltage protection to the smaller sizes of motors that heretofore have been started only with knife switches. The new Type J-1552 Form B switch is made for motors up to 1½ horsepower, thus bringing fractional horsepower motors within the range of push button operation.



Form B switch is of small size, measuring approximately 8 in. high, 6 in. wide, and 4½ in. deep. The Form B-1 switch is equipped with start-and-stop push buttons in the switch cover.

Conduit Bodies

Nine new types of conduit bodies have been added to the line of the Killark Electric Manufacturing Company, St. Louis. Three of

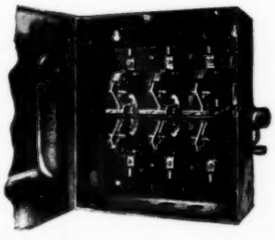
the new types are shown here. These fittings are being made in all sizes from ½-in. to 2-in., inclusive. They are supplied in either

black japan or galvanized finish at no difference in price and are intended especially

for use on exposed rigid conduits such as are usually found in garages, factories, etc.

Safety Switches

The Trumbull Electric Manufacturing Company, Plainville, Conn., has put on the market a new line of 600-v. double-throw safety switches. The feature of the new line is the adaptation of the company's "Snuf-Arcs" to double throw switches with the quick break

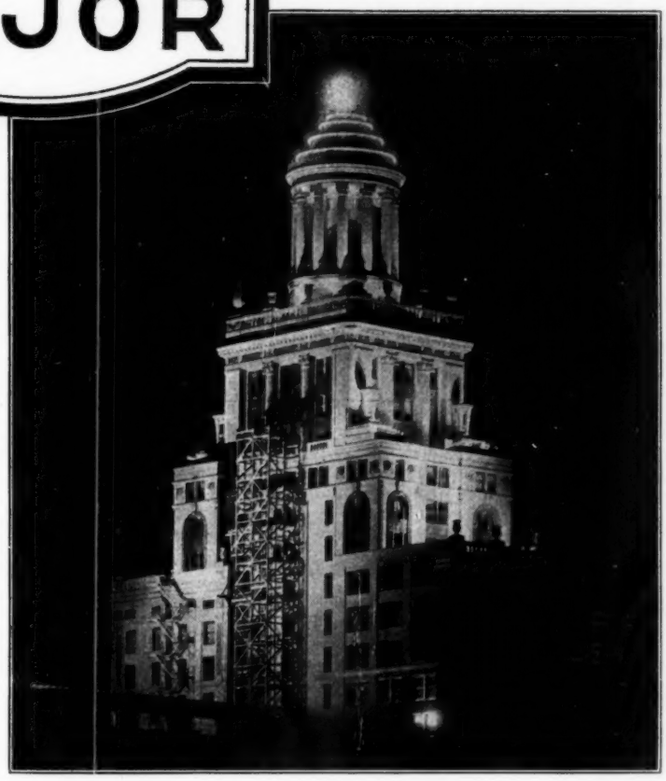


action still being retained. There are two switches in the new line, one type being no-fuse, double throw in 2, 3 and 4-pole and from 60 to 200-amp. capacity, while the other is made for N. E. C. cartridge fuses in the same size. Knockouts in both switches are provided in the ends, sides and rear.

Convertible Power Panel

A new type power panel has been announced by the Square D Company, Detroit. In addition to the convertible feature, which permits a change to 30, 60 or 100 amp. fuses in the circuits, testing facilities have been added and a duplex design cabinet makes it possible to reduce the size of the power panel cabinet materially. Test jacks are provided in each circuit. These test jacks are mounted on individual insulating bases and holes are provided in the cabinet door so that the test

MAJOR



The Niels-Eperson Building, Houston. John Eberson, Chicago, Architect.

Major Floodlights the Niels Eperson Building

This newer structure has been acclaimed "The Greatest Building in the Entire Southwest." A pioneer in the modern and finer designs. The Niels-Eperson Building is floodlighted, of course, MAJOR Equipment is used.

MAJOR Floodlights are used here, and elsewhere, because they give far better results. Better lighting, greater brilliancy and economy of operation, are the MAJOR factors. You can profit by MAJOR Floodlighting. It looks big. It is easy to sell, it gives big results. It stays sold and sells other floodlighting jobs on its reputation. The profit margin will interest you.

Write for the details, special floodlight bulletins and complete estimates. All are free.

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Boston, Mass.
David H. Davidson, 333 Washington St.

Buffalo, N. Y.
Ralph E. Jones, 184 Main St.

Cincinnati, Ohio
E. F. Schurig, 44 E. Third St.

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D. C. Griffiths, Rockefeller Bldg.

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R. S. Wakefield, 2425 Commerce St.

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Alex. Hibbard, Inc., 1940 Blake St.

Detroit, Mich.
H. H. Norton, 2638 Wabash Ave.

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The Scott-Jaqua Co., Inc., 230 S. Penn St.

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P. W. Cole Co., 316 E. 12th St.

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F. C. Arnold, 3050 Northwest 2nd. Ave.

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Wm. A. MacAvoy, Jr., 244 N. 10th St.

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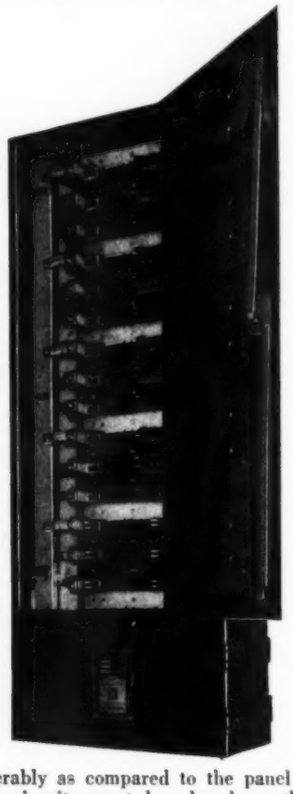
Baker Joslyn Co., 490 Second St.

Seattle, Wash.
Metropolitan Elec. Sup. Co., 524 First Ave. S.

St. Louis, Mo.
O. H. Rottman, 3649 Bell Avenue.

plug can be inserted to the jack without opening the door. When the plug is not inserted the opening in the door is kept closed by means of a sliding cover.

The cabinet is of the duplex design, for column mounting with doors on each side of the cabinet. The main bus bars are brought down the side of the cabinet and in this way it is possible to place half the total number of circuits on each side of the cabinet. This construction reduces the size of the cabinet



considerably as compared to the panel where all the circuits must be placed on the one side. A compartment at the top or bottom encloses the main lugs which are set at an angle making it easy for the connections to be made. All cabinet trims are hinged so that it is a one-man job to get access to any of the gutters. To convert the circuits from 30 to 60 to 100 amp. fuse spacings all that is necessary is to loosen a few nuts holding the supporting grids and the individual bases can be moved to the correct spacing as indicated on the grids.

Receptacle and Box

A midget floor receptacle and box of the residence type is being manufactured by the Fullman Manufacturing Company, Latrobe, Pa. It is designed to provide an extremely small convenience outlet for residence work and for use in wood floors in place of wall or baseboard outlets. The device is furnished

with a screw adjustment to make it suitable for both double and single floors. The company calls attention to the fact that the receptacle has been approved by the Underwriters' Laboratories as a non-watertight floor receptacle.

Manufacturing Notes

The Beardslee Chandelier Manufacturing Company has purchased the plant of the Beverly Lights Corporation at Providence, R. I. The operation of the plant will be continued under the new management and the Beardslee company will open an eastern office at Providence.

A sales convention, attended by all the company's district managers, factory representatives, agents and distributors east of the Mississippi, was held on January 3 and 4 at Dayton, O., by the Master Electric Company. The greater part of the two days was used in discussing sales plans for the year and the explanation of a large number of refinements made in manufacturing processes and products during 1926.

New sales agents have been appointed by the Killark Electric Manufacturing Company, St. Louis, as follows: E. S. Moorer, Greenwood, S. C., for North and South Carolina; Atkinson Equipment Company, Atlanta Trust Company Building, Atlanta, Ga., for the State of Georgia. A complete stock of Killark fittings and transformers will be maintained at Atlanta.

The Beardslee Chandelier Manufacturing Company has just issued a 137 page catalog showing lighting fixtures for public buildings, said by the company to be the first catalogue devoted exclusively to fixtures for buildings of a public or semi-public nature.

A new style packing has been developed for the No. 7050 feed-through switch manufactured by the Cutler-Hammer Manufacturing Company, Milwaukee, and is designed to increase "over the counter" sales of this article. The packing consists of a colored counter display carton containing ten individual boxes.

"How to Use Resistance in Radio" is the title of a new booklet issued by the Ward Leonard Electric Company, Mt. Vernon, N. Y., which is intended for distribution to the public through the dealer. It explains in non-technical language the purpose and uses of resistance as applied to radio circuits.

The Trico Fuse Manufacturing Company, Milwaukee, has taken considerable additional floor space, in a building adjoining the present plant, in order to increase production of their product.

The H. Lee Reynolds Company, with offices in the Oliver Building, Pittsburgh, and in the Plymouth Building, Cleveland, have been appointed selling representatives for the American Circular Loom Company on "Xduct" and "Electroduct" rigid conduit, "Loomflex" nonmetallic flexible conduit, and steel armored conductors and flexible steel conduit.

A booklet has been issued by the General Electric Company, describing and illustrating sectional drive for paper machines.

The George Cutter Company, South Bend, Ind., and the Westinghouse Electric Products Company, Mansfield, O., will no longer function as subsidiaries of the Westinghouse Electric and Manufacturing Company. Hereafter they will be part of the parent company and will be designated, respectively, as the street lighting department and the Mansfield works.

The following appointments have been made by the General Electric Company: Theodore Beran, H. L. Monroe and J. A. Cranston, commercial vice presidents in charge of the commercial activities of the company in the New York, Central and Pacific Coast districts, respectively; E. W. Allen, vice president in charge of engineering; G. E. Emmons, acting vice president in charge of manufacturing.

The Electric Controller and Manufacturing Company, Cleveland, has published two new bulletins, No. 1037-C describing type B limit stops for use with alternating and direct current motors, and No. 1042-F, describing automatic compensators for 110 to 550-v. a. c. squirrel cage and synchronous motors.

A new catalogue has been issued by the F. W. Wakefield Brass Company, Vermilion, Ohio, giving prices and data on the company's "Red Spot" hangers.

J. E. "Jess" Lauderdale, formerly Chicago sales manager for Curtis Lighting, Inc., has been appointed sales manager of the company, with Norman B. Hickox continuing in his present capacity as vice president in charge of sales. Mr. Lauderdale will be succeeded in the Chicago territory by Paul D. Cornelisen, formerly resident engineer for the company in the St. Louis territory.

Walter S. Sweet, 312 Omar Avenue, Los Angeles, Cal., has been appointed California representative for the Roach Appleton Manufacturing Company.

The Buffalo Forge Company has announced that beginning January 1 its Philadelphia office, in the Land Title Building, will be in charge of W. S. Koithan and R. W. Pryor, Jr., who have for many years been joint managers of the New York office. They will continue to manage the New York district.

The Pierce Electric Company, Jacksonville (Fla.) jobber, has moved to the new building erected by the company at 710 Bell Street.

New sales appointments of the Allen-Bradley Company are as follows: J. A. White, district manager of the company's new Detroit office; George F. Pain, district manager of the Philadelphia office at 421 Bulletin Building.

The first issue of *The Triangle*, a monthly news letter which will be distributed to electrical contractors and jobbers' salesmen, has been issued by the Triangle Conduit Company.

A new district office has been established by the Triangle Conduit Company at Seattle, Wash., with H. H. Manny in charge. The St. Louis district office, it is announced, has been moved to 1107 Clark Avenue, while the Atlanta office will be in the Bona-Allen Building under the direction of B. L. Kethley.

The Wagner Electric Corporation has appointed H. P. Whalen as sales representative in charge of its branch offices at Buffalo and Syracuse.